

Parental support and exclusive breastfeeding at 3 months in West Java, Indonesia: a mixed-methods approach

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Background: The exclusive breastfeeding (EBF) rate in Indonesia is lower than expected. Among the key factors affecting breastfeeding practices, paternal support has been suggested.

Purpose: To explore the role of paternal support in EBF failure among 3-month-old infants.

Methods: This sequential mixed-methods study, part of an ongoing cohort study in West Java in early 2022, included 225 infants. The parents of 3-month-old infants were interviewed. Paternal support was assessed using a 15-point validated questionnaire for a total score of 15–60 points. Multivariate binary regression was used to determine adjusted odds ratios (aORs). The qualitative exploration was based on in-depth interviews (IDIs) and forum group discussions (FGDs) following the quantitative survey.

Results: Of the 225 infants, 52.2% were no longer EBF. High paternal support (greater than the mean score) of breastfeeding was determined in 52.9% of cases (mean±standard deviation, 38.7±6.7 for the overall population vs. 37.5±6.3 and 40.2±6.8 for infants who were and were not EBF at 3 months of age, respectively). Low paternal support was associated with an increased EBF failure rate (aOR, 2.84; 95% confidence interval [CI], 1.46–5.54). Other variables that remained as predictors in the final model were a low birth rate (aOR, 7.35; 95% CI, 1.73–31.20), negative maternal attitude (aOR, 3.31; 95% CI, 1.63–6.75), lower self-efficacy (aOR, 4.82; 95% CI, 2.43–9.57), and lower maternal education level (aOR, 2.87; 95% CI, 1.03–8.03). The IDIs and FGD observed the importance of the father's support of the mother and EBF. The qualitative exploration revealed a lack of knowledge about EBF as a parental support barrier.

Conclusion: Paternal support is important for EBF. Paternal involvement in EBF planning encouraged them to continue. Plans that include fathers in breastfeeding education may help increase paternal support.

Key words: Breast feeding, Fathers, Social support

Key message

Question: Does paternal support affect exclusive breastfeeding failure?

Finding: Exclusive breastfeeding failure by 3 months was affected by paternal support.

Meaning: Fathers should be included in breastfeeding education and antenatal care.

Introduction

Exclusive breastfeeding (EBF) is an effective and ideal way to provide the best nutritious food at the beginning of life. EBF also protects from infant mortality and morbidity, as well as future health.^{1,2} While the importance of EBF has been recognized, the global EBF practice was still considered lower than expected. Globally, less than 50% of infants breastfed exclusively and even lower in upper-middle and high-income countries.² The Indonesian government has been supportive of the breastfeeding initiatives by incorporating EBF as a government rule.³ EBF also has a focus on 1,000 first day of life intervention.⁴ In Indonesia, 72% were exclusively breastfed in 2022, however, the rate of EBF was only around 50% in some regions. Moreover, the rate of EBF was also lower in the urban compared to rural.⁵ While the country's economy is growing and more urban areas are emerging, this trend gives rise to some concerns about the future improvement of EBF coverage.

The breastfeeding journey could be challenging. Although in general mothers were aware of the importance of breastfeeding, they could not always maintain exclusively breastfeeding or even continue breastfeeding at all.⁶ The barriers to breastfeeding include physical aspects of breastfeeding, limited knowledge of the practice, low self-efficacy, and social environment support. Mother's social support contributes highly to breastfeeding behaviour.⁶ Significant

others, especially the child's fathers support, has been suggested as the key factor to improve the breastfeeding practice and outcome.⁶⁻⁹ Father's involvement in breastfeeding practice has been suggested in several literature. A study showed that a mother's low self-efficacy to breastfeed was associated with a low partner's involvement in prenatal care.¹⁰ In other studies, the father's support, attitude, and involvement influenced the mother's commitment to breastfeeding.^{9,11}

Although some studies already observed the prominent role of the father in the breastfeeding process, the qualitative exploration of the context was limited. A study in the United Kingdom shows that fathers wanted to support the mothers, but often felt left out and helpless.¹² Meanwhile, in Indonesia, the father's role in the breastfeeding process and child-feeding practice was still considerably low.¹³ Father's support and breastfeeding have been discussed in some previous literature, however, a very limited number of study provides quantitative measures of father's support. This study was part of an ongoing cohort, 'Sawangan Cohort,' conducted in West Java, Indonesia, observing pregnant mothers since the beginning of their pregnancy until recently their newborn has turned at least 3 months by the time of data collection. The initial aim of the cohort was to observe early life factors to malnutrition and therefore the location selection was based on under-five stunting incidence.^{14,15} The availability of comprehensive prenatal history data provide better context of the father's involvement in EBF, as one of the contributing variable to stunting. The current analysis used a sequential mixed-method design with a primary cohort quantitative phase and proceeded with a qualitative phase using in-depth interviews (IDIs) and focus group discussion (FGD) to explain the significance found in the quantitative phase.

Methods

1. Study design

This study used a sequential mixed-method design with a quantitative phase collected ahead of the qualitative phase as part of an ongoing cohort, 'Sawangan Cohort,'¹⁶ observation in 3 districts with high stunting prevalence in Depok, West Java, Indonesia; Pengasinan, Bedahan, and Pasir Putih. The cohort study was conducted since early 2022, observing iron folic acid consumption and its associated variables and its effect on maternal and child health since the first trimester of pregnancy. The study invited all pregnant women with no known chronic disease who visited a community-based health provider (local term: Posyandu) to participate in the cohort. The survey related to EBF was conducted when all of the newborns have reached at least 3 months old, which

was the median duration of EBF age based on the Indonesia Demographic and Health Survey 2017.¹⁷ The baseline survey at the beginning of the pregnancy was joined by 233 mothers who gave informed consent, however, due to loss of follow-up, only 225 parents-infant pairs were included in the analysis. The flow of study population was as presented in Fig. 1.

2. Data collection

The quantitative data for this study was collected by the enumerators when the newborn was at least aged 3 months. The dependent variable was EBF practice, and the observed predictor was the father's support for breastfeeding. The data collection used a validated structured questionnaire (Cronbach alpha=0.611) explained elsewhere.¹⁶ EBF practice was defined as no other food and drinks given yet to the infant other than breastmilk since birth up to at least 6 months or until the time of data collection for infant aged less than 6 months, which in this study was 3 months. Father's support variable was based on 15-point questions to be answered on a Likert scale one, represents never, to four, represents always, with possible scores ranging from 15 to 60. All continuous scoring variables were analyzed as binomial variables using each defined cutoffs using the mean score in the current population. High support was defined as score $\geq$ mean, otherwise low. The question components are presented in Fig. 2. Other potential confounding variables were also included in the analysis: child's sex, birth weight (low birth weight [LBW] or normal), mother's consumption of lactation-support milk and vegetables (*katuk* leaf, *kelor* leaf, spinach) consumption, mother's nutritional status, gestational age at birth, maternal parity, number of children delivered, mother's age, the gap between pregnancies, mother's knowledge of breastfeeding, mother's attitude to breastfeeding, mother's experience of breastfeeding, mother's self-efficacy, mother's occupation, father's occupation, the health-related decision maker in the family (based on mother's perception), and family income. Mother's knowledge, attitude, and experience were based on true or false questions each topic consisted of 5, 8, and 10 questions

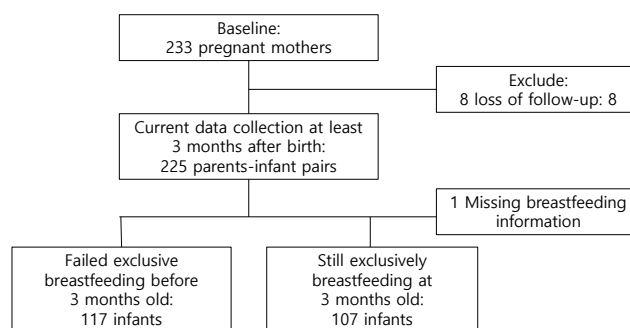


Fig. 1. Flow diagram of study population

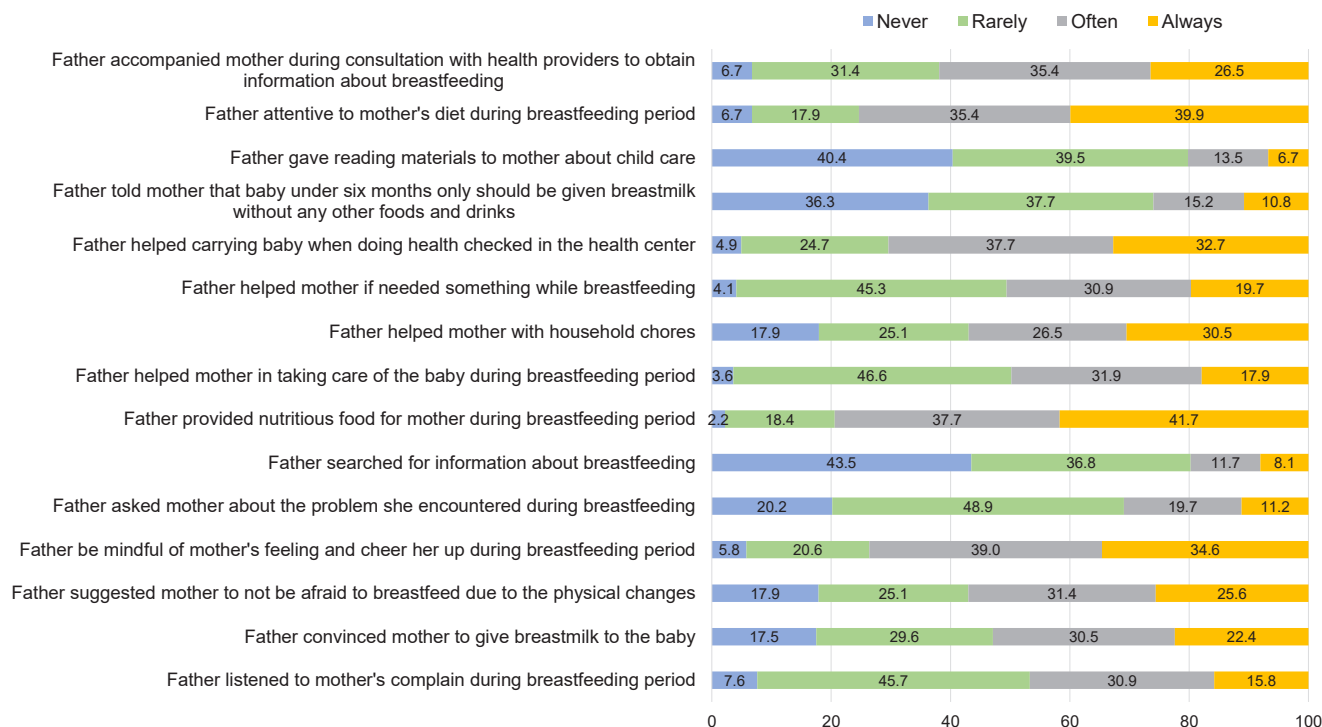


Fig. 2. Father's support components and distributions.

respectively, with the right answer scoring 2 and the wrong answer scoring 1. High knowledge, attitude, and experience, each, were defined as score $\geq$ mean, otherwise low.

The qualitative phase was conducted after the newborns turned 3 months in the form of IDIs and FGDs. Based on the quantitative result, 14 fathers and 20 mothers who were respondents for the quantitative survey were randomly picked and invited for IDIs. Three midwives, 1 nutritionist, 1 health promotion staff, 2 heads of the community health centers, 3 Health Office staffs, and 1 representative of non-government organization (NGO) for lactation support also invited to participate in IDIs. An FGD was conducted with 23 cadres. The IDIs and FGD were conducted by experienced and trained researchers from Universitas Indonesia who were fluent in the local language (Bahasa Indonesia). The IDIs were conducted privately, while the FGD was conducted in the local hall. All IDIs and the FGD were conducted in Bahasa Indonesia and audio recorded, which were then transcribed verbatim and translated into English for publication by the interviewers and cross-checked with 2 experienced transcribers fluent in Bahasa Indonesia and English. The triangulation involved results from the questionnaire and quotations from IDIs and the FGD.

3. Data analysis

This study used IBM SPSS Statistics ver. 29.0 (IBM Co., Armonk, NY, USA) for data analysis. Variable with missing data was still included in the study, therefore the number of analyzed subjects for each variable may differ. All variables

were nominal and presented in number and percentage. The association between observed variables and outcomes was analyzed using logistic regression to find the odds ratio (OR). Variables with $P < 0.25$ were included in the multivariable model and were treated as confounders for the adjusted OR (aOR) analysis. By using a 95% confidence interval, the level of significance for this study was at $P < 0.05$. Category for qualitative data categorization was selected based on the triangulation. The Authors looked for patterns and recurring comments to be further interpreted. The important or saturated quotation(s) was presented in paragraphs with reference to the individuals for IDIs or noted as 'FGD' for FGD results.

4. Ethical approval and consent to participate

This project received ethical approval from the Research and Community Engagement Ethical Committee Faculty of Public Health, Universitas Indonesia No: 440/UN2.F10.D11/PPM.00.02/2023. Formal written consent was obtained from all study participants.

Results

1. Quantitative results

Table 1 shows the study population's characteristics. Only 47.8% still adhered to EBF, while 52.2% were no longer exclusively breastfed. Among the 117 mothers who no longer provide EBF, 2 of them had stopped breastfeeding entirely.

Table 1. Population characteristics (n=225)

Variable	No. (%)
Child-related variable	
Sex (n=225)	
Female	109 (48.4)
Male	116 (51.6)
Exclusive breastfeeding status at 3 months (n=224)	
No	117 (52.2)
Yes	107 (47.8)
Birth weight (n=225)	
Low birth weight (<2,500 g)	20 (8.9)
Normal (≥2,500 g)	205 (91.1)
Mother-related variable	
Lactation milk consumption (n=225)	
Never	166 (73.8)
Ever	59 (26.2)
Breastmilk booster-vegetables consumption (n=224)	
<4x/wk	114 (50.9)
≥4x/wk	110 (49.1)
Midupper arm circumference (n=225)	
Undernourished (<23.5 cm)	14 (6.2)
Not undernourished (≥23.5 cm)	211 (93.8)
Body mass index (kg/m ²) (n=224)	
Not obese (<25.0)	103 (46)
Obese (≥25.0)	121 (54)
Gestational age (wk) (n=225)	
Preterm (<37)	22 (9.8)
Term (≥37)	203 (90.2)
Maternal parity (n=225)	
Multiparity	183 (81.3)
Primiparity (first child)	42 (18.7)
Number of children (n=224)	
≤2 Children	189 (85.1)
>2 Children	34 (14.9)
Mother's age (yr) at delivery (n=224)	
<20	4 (1.8)
20–35	178 (79.5)
>35	42 (18.7)
The gap between pregnancies (n=184)	
≤2 Years	15 (8.2)
>2 Years	169 (91.8)

*(Continued)***Table 1. Population characteristics (n=225) (Continued)**

Variable	No. (%)
Antenatal care (n=221)	
Incomplete (≤6 times)	34 (15.4)
Complete (>6 times)	187 (84.6)
Mother's education (n=225)	
Bachelor or higher	30 (13.3)
Graduated high school or under	195 (86.7)
Mother's knowledge of breastfeeding (n=225)	
Low (<mean)	101 (44.9)
High (≥mean)	124 (55.1)
Mother's attitude of breastfeeding (n=224)	
Negative	84 (37.5)
Positive	140 (62.5)
Mother's experience of breastfeeding (n=225)	
Low (<mean)	108 (48)
High (≥mean)	117 (52)
Mother's self-efficacy (n=221)	
Low (<mean)	98 (44.3)
High (≥mean)	123 (55.7)
Mother's occupation (n=225)	
Employed	26 (11.6)
Unemployed/stay-at-home mother	199 (88.4)
Household-related variable	
Father's occupation (n=225)	
Employed	106 (47.1)
Unemployed or seasonal labor	119 (52.9)
Father's education (n=224)	
Bachelor or higher	37 (16.5)
Graduated high school or under	187 (83.5)
Father's support for breastfeeding (n=223)	
Low (<mean)	105 (47.1)
High (≥mean)	118 (52.9)
The health-related decision maker in the family (mother's perception) (n=225)	
Father	87 (38.7)
Others ^{a)}	138 (61.3)
Family income (n=223)	
Low (<IDR 5.000.000)	186 (83.4)
High (>IDR 5.000.000)	37 (16.6)

IDR, official currency of Indonesia.

^{a)}Others include mother, grandparent, other relative.

Father's high support for breastfeeding was experienced by 52.9% of the infants with a mean score of 38.7±6.7 standard deviation (SD) out of 60. Father's support score in infants with EBF failure was for 37.5±6.3, and 40.2±6.8 in infants remained EBF. Low father's support was associated with failed EBF (OR, 2.36; 95% CI, 1.38–4.06) compared to fathers with higher support. Based on the support components breakdown (Fig. 2), 43.5% of fathers did not search for information related to breastfeeding. Support from the father was mostly in the form of providing nutritious food (41.7%).

The mother's knowledge mean score was 5.6±1.5 SD out of 10, the mother's attitude mean score was 13.8±1.8 SD out

of 16, and the mother's experience distribution was 16.4±2.4 SD out of 32. As father's support was associated with failed EBF, some other variables were found to be associated as well, including LBW (OR, 5.8; 95% CI, 1.66–20.53), low mother's knowledge (OR, 2.5; 95% CI, 3.04–10.44), low mother's attitude (OR, 5.6; 95% CI, 3.04–10.44), low mother's self-efficacy (OR, 7.26; 95% CI, 3.95–13.35), mother with less experience in breastfeeding (OR, 1.94; 95% CI, 1.14–3.30), and mother's with lower education (OR, 2.49; 95% CI, 1.11–5.60) as presented in Table 2. Incomplete Antenatal Care, low family income, firstborn, lower father's education, employed father, and obese mother were showing tendency to increased odds to failed EBF ($P<0.25$), therefore, included

Table 2. The association between the population characteristics and breastfeeding status at 3 months

Variable	No.	Breastfeeding status at 3 months		P value	OR (95% CI)
		Nonexclusive breastfeeding (%)	Exclusive breastfeeding (%)		
Sex (n=223)				1.000	
Male	116	52.6	47.4		1.010 (0.597–1.709)
Female	107	52.3	47.7		1
Gestational age (n=223)				0.075 [†]	
Preterm	22	72.7	27.3		2.640 (0.993–7.022)
Term	201	50.2	49.8		1
Delivery method (n=223)				0.759	
Normal	127	51.2	48.8		0.887 (0.521–1.509)
Sectio caesaria	96	54.2	45.8		1
Birth weight (g) (n=223)				0.005	
Low birth weight (<2,500)	20	85	25		5.837 (1.659–20.532)
Normal (>2,500)	203	49.3	50.7		1
Mother's knowledge of breastfeeding (n=223)				0.001	
Low (<mean)	100	65	35		2.536 (1.471–4.372)
High (≥mean)	123	42.3	57.7		1
Mother's attitude of breastfeeding (n=222)				0.000	
Negative	83	77.1	22.9		5.636 (3.042–10.441)
Positive	139	37.4	62.6		1
Mother's self-efficacy (n=219)				0.000	
Low (<mean)	98	77.6	22.4		7.263 (3.952–13.350)
High (≥mean)	121	32.2	67.8		1
Mother's experience of breastfeeding (n=224)				0.021	
Low (<mean)	107	60.7	39.3		1.935 (1.136–3.295)
High (≥mean)	117	44.8	55.2		1
The health-related decision maker in the family (mother's perception) (n=223)				0.470	
Father	86	48.8	51.2		0.789 (0.460–1.355)
Others ^{a)}	137	54.7	45.3		1
No. of children (n=222)				0.653	
≤2	189	52.9	40		1.264 (0.608–2.627)
>2	34	47.1	47.9		1
Antenatal care (n=221)				0.073 [†]	
Incomplete (≤6 times)	34	67.6	32.4		2.159 (0.996–4.680)
Complete (>6 times)	187	49.2	50.8		1
Family income (n=221)				0.076 [†]	
Low (<IDR 5,000,000)	184	55.4	44.6		2.044 (0.990–4.220)
High (>IDR 5,000,000)	37	37.8	62.2		1
Mother's age (yr) at delivery (n=224)					
<20	4	100.0	0.0	NA	NA
20–35	178	52.2	47.8		1
>35	42	47.6	52.4	0.590	0.831 (0.424–1.629)
Maternal parity (n=223)				0.167	
Multiparity	182	50	50		0.577 (0.287–1.160)
Primiparity (first child)	41	63.4	36.6		1
The gap between pregnancies (n=183)		0.605			
≤2 Years	15	40	60		0.651 (0.222–1.910)
>2 Years	168	50.6	49.4		1
Lactation milk consumption (n=224)				0.808	
Never	166	53	47		1.128 (0.620–2.052)
Ever	58	50	50		1
Breastmilk booster-vegetables consumption (n=223)				0.471	
<4x/wk	114	55.3	44.7		1.258 (0.743–2.130)
≥4x/wk	109	49.5	50.5		1

(Continued)

Table 2. The association between the population characteristics and breastfeeding status at 3 months (Continued)

Variable	No.	Breastfeeding status at 3 months		P value	OR (95% CI)
		Nonexclusive breastfeeding (%)	Exclusive breastfeeding (%)		
Mother's education (n=223)				0.024	
Senior high school or under	193	55.4	44.6		2.488 (1.107–5.596)
Bachelor or higher	30	33.3	66.7		1
Father's education (n=222)				0.149	
Senior high school or under	185	55.1	44.9		1.802 (0.880–3.693)
Bachelor or higher	37	40.5	59.5		1
Father's occupation (n=225)				0.236	
Employed	107	57.1	42.9		1.427 (0.841–2.422)
Unemployed or seasonal labor	118	48.3	51.7		1
Mother's occupation (n=223)				0.633	
Employed	26	46.2	53.8		0.751 (0.331–1.706)
Unemployed	197	53.3	46.7		1
Mother's midupper arm circumference (n=223)				0.640	
Undernourished (<23.5 cm)	14	42.9	57.1		0.662 (0.222–1.975)
Not undernourished (≥23.5 cm)	209	53.1	46.9		1
Mother's body mass index (kg/m ²) (n=223)				0.220	
Not obese (<25.0)	102	47.1	52.9		0.693 (0.408–1.176)
Obese (≥25.0)	121	56.2	43.8		1
Father's support for breastfeeding (n=222)				0.003	
Low	105	63.8	36.2		2.363 (1.376–4.058)
High	117	42.7	57.3		1

OR, odds ratio; CI, confidence interval; IDR, official currency of Indonesia.

^aOthers include mother, grandparent, other relative. [†]P<0.1.

Boldface indicates a statistically significant difference with P<0.05.

in the multivariable analysis as confounding variables.

Father's support, gestational age at delivery, birth weight, mother's knowledge, mother's attitude, mother's self-efficacy, mother's experience, ANC, family income, mother's parity, mother's education, father's education, father's occupation, and mother's body mass index were included in the initial multivariable model (Supplementary Table 1). After adjustment with confounding variables, father's support remained a significantly associated variable. Fig. 3 shows the forest plot of the final model variables to the event of EBF failure in 3 months old infant. Low father's support was associated with increased failed EBF (aOR, 2.84; 95% CI, 1.46–5.54), other variables that remained as a predictor in the final mode were LBW (aOR, 7.35; 95% CI, 1.73–31.20), lower mother's attitude (aOR, 3.31; 95% CI, 1.63–6.75), lower self-efficacy (aOR, 4.82; 95% CI, 2.43–9.57), and lower mother's education (aOR, 2.87; 95% CI, 1.03–8.03).

2. Qualitative results

The IDIs and FGD explored the father's support, the father's knowledge and perception, and other reasons contribute to EBF.

1) Father's support

Father's support was mentioned by the mothers as one of the factors in planning and practicing breastfeeding. Most

mothers already planned for EBF since pregnancy. Some discussed with the father and had his support, but some perceived that their husband did not care.

"We planned since pregnancy and delivery to exclusively breastfeed the baby until 6 months, she [the wife] told me if she had plans and we discussed" (Father 1)

"I did not know. We never talked about it" (Fathers 2, 3, 4)

"I did not talk about it with my husband, he never asked either" (Mother 6)

"Husband's involvement is very important, many lactating mothers were confused, but the husbands think it was women's business" (FGD)

"Men do not want to know about it [breastfeeding]" (FGD)

The father's support was mentioned as a reason for remaining exclusively breastfed.

"Because I followed what the midwife advised to give only breastmilk for 6 months. The baby had no problem and my husband supported." (Mothers 1, 4, 7)

"I gave support and gave motivation, listened, and encouraged her [mother]" (Father 8)

"My husband encouraged me" (Mothers 4, 9)

"My husband worked far away but he sent things as support, such as dates" (Mother 19)

"I was told [by father] to eat nutritious food to boost the breastmilk" (Mothers 9, 2, 11, 13, 14, 15, 16)

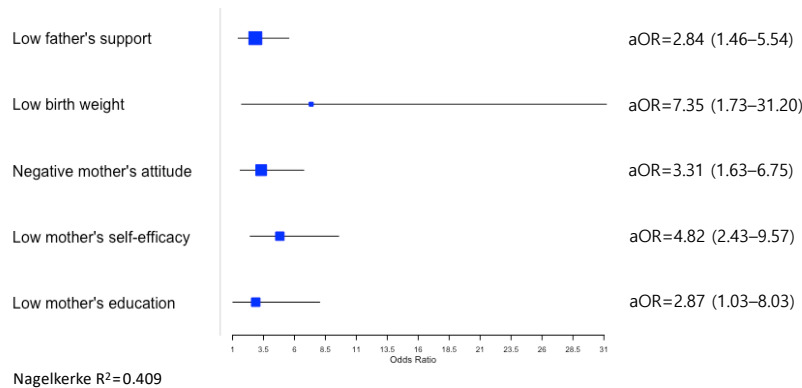


Fig. 3. Forest plot of final multivariable model of exclusive breastfeeding failure among 3-month-old infants. The initial model included paternal support, gestational age at delivery, birth weight, maternal knowledge of breastfeeding, maternal attitude, maternal self-efficacy, maternal experience with breastfeeding, antenatal care, family income, maternal parity, maternal education, paternal education, paternal occupation, and maternal body mass index. Values are presented as adjusted odds ratios and 95% confidence intervals.

"I asked if the breastmilk is plenty, take a lot of vegetables if you [mother] were lactating. And also encourage [the mother] to breastfeed the baby so my wife does not feel exhausted ... If I was not working, I helped with sweeping, washing clothes, and taking care of the baby" (Father 1)

The father's support provides happiness and comfort to the mother. The mother felt less stressed and felt the attention increased their bonding as a couple which encouraged the mother to breastfeed.

"I am just happy. It affects my breastfeeding" (Mothers 7, 15, 16, 19)

"I just tried to make her [mother] happy and comfortable so she feels encouraged to breastfeed" (Father 8)

However, the father's decision also mentioned being involved in EBF failure and early complementary feeding at 3 months. Most mothers asked for the father's permission to give early complementary feeding.

"Most often, the mother was stressed, the nipple was cracked, and the husband was not supportive or supportive only when there was a problem" (NGO)

"It is my initiative to buy formula because the breastmilk seemed too little and the baby was crying a lot. I was confused and panicked and had no experience with the first child. I discussed with my wife after and stopped the formula and went back to breastfeeding." (Father 3)

"There were times the breastmilk was little, we tried to find the solution together [decide to give early complementary feeding]" (Mother 14)

"I gave my child fruits because the father insisted, he thought the baby already craved [for food]" (Mother 15)

"I gave the baby formula without my husband knowing, because the baby was crying a lot" (Mother 16)

"Some mothers gave the formula with their initiative" (Midwife 1)

"Some mothers stopped exclusive breastfeeding because no support from husband and family" (Midwife 2, FGD)

"Father's role is very important because a lot of lactating mothers were uncertain especially for the first breastfeeding. But some husbands think that it is women's business" (FGD)

Other than breastfeeding, some mothers hoped that fathers would help them do the house chores, such as laundry, washing dishes, sweeping, and others. Some fathers help with chores and taking care of the newborn, however, some mothers do all the chores including looking after and nurturing the baby by themselves.

"I sometimes help with household chores, I did her work before went to work" (Fathers 5, 8)

"We share tasks" (Mothers 7, 9, 16)

"Some fathers since the wife got pregnant helped with laundry, dishes, and taking care of children" (FGD)

"It is the wife's duty, I will help when I can" (Father 2)

"It was exhausting because I did it all on my own" (Mother 17)

"My husband was working and rarely at home" (Mother 18)

2) Father's knowledge and perception

Fathers were more familiar with breastfeeding for at least 2 years compared to EBF. Some fathers knew the benefit of breastfeeding from midwives during ANC, while others were informed through digital social media.

"Never heard at all about exclusive breastfeeding" (Fathers 2, 3, 4, 10)

"Some father gave honey to the newborn" (FGD)

"Honey is safe for the newborn" (Fathers 3, 4)

"Yes, I know from the midwife and also television advertise-

ment that exclusive for 6 months [breastfeeding] so the baby could be close the his mom" (Father 8)

Father's perception of early complementary feeding was diverse. Some did not object because the breastmilk was not plenty, but some others believe that breastmilk is best and healthier.

"When the breastmilk was still not plenty we gave formula. The information from the midwife, it is okay. My wife also gave food, I think it was okay" (Father 8)

"I feel that breastmilk is safer. Formula milk, I am afraid it could lead to obesity and digestive problems, I don't know but I am afraid. Breastmilk is also cheaper" (Father 14)

"Breastfed baby is healthier" (Fathers 10, 13)

The lack of programs aiming to educate the father was a reason for the misconception about breastfeeding from the father's perspective.

"There were no maternal and child health programs that involved the father in the community health center" (Midwife 2, Community health center representative, Health Office)

"Husbands mostly waited outside" (Health Office, FGD)

"Maybe if there was a male cadre, fathers would be more involved" (FGD)

3) Other reasons to remain exclusively breastfeeding

Some other reasons to remain exclusively breastfeeding the baby were explored, including mothers' self-efficacy, mother's knowledge, and experience, baby's health, breastmilk still plenty, following the midwives' advice, found no barriers to breastfeeding, the baby did not like formula milk, other milk caused an allergy and economical reason.

"No problem with breastfeeding, the breastmilk also still flowing" (Mothers 2, 13, 17, 11)

"I am sure I can provide breastmilk" (Mothers 7, 16, 20)

"Since this was not my first [baby], I already get used to it" (Mothers 4, 9, 16, 19)

"My baby did not like milk [formula] and also the skin was red when consumed [formula]" (Mother 8)

"Formula milk is expensive" (Mother 21)

"I was thinking about the baby, so the baby could be healthy. Breastmilk is good for immunity." (Mother 12)

"Only breastmilk until 6 months, I was afraid of infection, the baby's stomach is not ready yet for food." (Father 1 and Mother 1)

"Mothers understood that breastmilk is cheaper" (Midwife 2)

"Breastfeeding and exclusive breastfeeding were explained during ANC" (Midwife 1, Midwife 2, FGD, Mother 2)

Discussion

Based on this quantitative longitudinal observation and qualitative interviews, more than half of the 3-month-old babies had breastfeeding failure to achieve EBF. Low father's support, along with the history of LBW, the mother's low attitude, low self-efficacy, and low education, was a significant factor that affected EBF failure.

The current number of babies with EBF was lower compared to the national report, 72.0%.¹⁸⁾ The gaps suggest a need for further plans to improve the EBF practice in this population. Improving the father's support, the mother's attitude toward breastfeeding, the mother's self-efficacy, as well as LBW prevention could be included in future maternal and child health plans.

Father's support of breastfeeding has been suggested as a predictor for EBF in a previous review. Father's involvement since the planning of breastfeeding was expected, however, some mothers felt that the father did not care. In line with the current findings, another Indonesian-based research also reported that the prenatal period was important in determining the intention to exclusively breastfeed the future newborn.¹⁹⁾ Intention to EBF was not only required from the mother but also father. A previous study shows that male partner attitudes and intention to breastfeed were correlated with the mother's.²⁰⁾ While the current study found that the mother's attitude was also a predictor for EBF, the qualitative exploration suggested that the father's support does improve the mother's attitude to breastfeeding. As found in this population, previous studies explained that the father's support affected the mother's will and acted as a moral boost to the mother's breastfeeding practice.^{20,21)}

Fathers' support was expected, however, whether or not a father could be supportive may depend on their knowledge about breastfeeding.^{11,22)} This study explored father's knowledge and perspective on EBF and found that most fathers did not have proper knowledge of EBF. Based on the current interview with community health centers and the Health Office, to date, there have been no maternal and child health programs that targeted fathers. Fathers in different populations also experienced inadequate levels of information from health providers related to breastfeeding. Meanwhile, several intervention studies targeting fathers have shown a positive influence on mothers' breastfeeding practice.^{23,24)}

Mother's attitude, self-efficacy, and education were identified as factors that also affected the success of EBF practice. These findings were also reported in a previous study observing that suboptimal knowledge, a positive maternal attitude, and a strong intention to breastfeed since prenatal were predictors of breastfeeding practice.²⁵⁾ Breastfeeding

is a complex physiological, social, and psychological process that could be challenging and would benefit from mother's positive attitude and self-efficacy that helps with the bonding experience with the newborn.²⁶⁾

LBW was a factor that increased the events of failure in EBF, however, LBW was not come out as a direct reason in the IDIs and FGD. Parents' perception that the breastmilk was not enough and their child was not fulfilled by breastmilk were the direct reasons that came out in the qualitative exploration. There was a possible connection that LBW was affecting the breastfeeding process but not EBF failure directly. Based on the available evidence, breastmilk production was influenced by the baby's development in sucking reflex and further affected breastmilk production. Moreover, stress associated with having LBW baby was also known as a factor that could impacted mothers.²⁷⁻²⁹⁾ The World Health Organization provides a strong recommendation that LBW and very low birth weight (VLBW) newborns be fed their mother's breastmilk.³⁰⁾ However, it is a common practice to give formula to LBW and VLBW newborns to help boost the weight.³¹⁾ Exclusive breastfed infants did exhibit a slower weight gain compared to the formula-fed infants, although, they had better metabolic and neurological outcomes compared to the formula fed.³²⁾

This study has some limitations in that the observation was conducted at 3 months old and not 6 months old to see the overall EBF failure or success, therefore, different variables may affect the overall EBF success. The study population also limited to 3 districts, and may not be applicable in wider Indonesian population. Despite the limitations, this study was among the limited studies that provide a quantitative measure for fathers' support of breastfeeding with qualitative exploration. Although observed at 3 months old, the current result already shows a proportionate number of newborns without EBF. The use of cohort data allowed a comprehensive data collection since before birth, while, the qualitative approach provide information on the problem from the perspective of the parents and health-workers. In most times, mother has been identified as the person of interest in the topic of breastfeeding. However, the current qualitative approach shows that father has a prominent role in breastfeeding success and both parents' coordination was important in child nurturing. The current result encourages public health approach in breastfeeding education targeting fathers. ANC programs also needs to include father to improve both parents' knowledge and preparedness for the upcoming newborn.

Footnotes

Supplementary material: Supplementary Table 1 can be

found via <https://doi.org/10.3345/cep.2023.01375>.

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