



Effect of Accompaniment-Trained Peer Neighbor on Exclusive Breastfeeding Duration and Prevalence: A Quasi-Experimental Study

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Abstract

Introduction: Although WHO has recommended that all babies get exclusive breastfeeding (EBF), until now EBF practice in Indonesia is still low (38%). Therefore, more efforts are needed for successful of EBF. This study aimed to examine the effect of accompaniment by trained peer neighbor (ATPN) on EBF duration and prevalence. **Methods:** Quasi-experiment was used to compare the duration of EBF between intervention and control. The intervention group (n=49) received ATPN by scheduled home visits 15 times providing informational and practical support. The control group (n=49) received postpartum care standards. Duration of EBF was measured weekly to 24th week postpartum. Data collection was carried out in June-December 2022. Survival analysis continued with Cox proportional hazards used to analyze the effect of intervention on EBF duration. **Results:** The median duration of EBF in the intervention and control group were 21.63 weeks and 15.85 weeks respectively ($p < 0.001$). The prevalence of EBF at 24 weeks of the intervention versus control groups was (59.1% vs. 12.2%). The intervention group had risk cessation of EBF 0,32 times compared to the control group (CI: 0.197, 0.528). **Conclusion:** The ATPN was easy to implement in increasing EBF duration.

Introduction

Many studies have shown that exclusive breastfeeding provides health benefits for both the baby and the mother. Exclusive breastfeeding can reduce the risk of diarrhea, the risk of acute respiratory infections, and the risk of death of infants aged 0-5 months (Sankar *et al.*, 2015; Ogbo *et al.*, 2017). Furthermore, mothers who breastfeed their babies for more than 12 months can reduce the risk of breast and ovarian cancer incidence (Chowdhury *et al.*, 2015). The WHO has recommended that all babies in the world be exclusively breastfed. But until now only 41% of babies in the world are exclusively breastfed. Therefore, WHO set a target of achieving 70% exclusive breastfeeding by 2030 (WHO & UNICEF, 2019). The achievement of exclusive breastfeeding in some countries was still low. As is the case in low- and middle-income countries, only about 37%

of babies are exclusively breastfed (Victora *et al.*, 2016).

National survey in Indonesia shows that the number of mothers who breastfed babies were exclusively aged 1 month after birth (67%), 2-3 months after birth (55%), aged 4-5 months after birth (38%). Furthermore, it was reported that the median of exclusive breastfeeding was 3.0 months and the median duration of breastfeeding was 21.8 months (SDKI, 2013). Regarding the findings of these data, several research results in Indonesia found that low knowledge about breastfeeding (Susiloretni *et al.*, 2013), poor attitudes towards breastfeeding, and lack of support health workers (Yulidasari *et al.* 2017) are determining factors for the success of exclusive breastfeeding.

Several interventions to increase the success of exclusive breastfeeding have been carried out such as family support, but these

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interventions have not been optimal because the support provided by families is more in the form of emotional support (Februhartanty *et al.*, 2006; Emmott & Mace, 2015). Other intervention models are education and counseling provided by health workers, including lactation counselors (van Dellen *et al.*, 2019), nurses (Tseng *et al.*, 2020), and midwives (RM *et al.*, 2019). However, the intervention has been ineffective. Until now in Indonesia, the number of breastfeeding counselors is 4.314, midwives 336.984, and nurses 563.739 while the number of infants is 14.188.458 (Kemenkes, 2019). The amount of health workers was limited and the time available was inadequate to assist due to the high workload in healthcare facilities (Pemo *et al.*, 2020).

Another intervention model is the accompaniment of trained peers (Nankunda *et al.*, 2010). Although this intervention was able to improve exclusively breastfeeding, However, the methods of support and forms of support were still very diverse (Sudfeld *et al.*, 2012). This study aimed to measure the effect of accompaniment provided by trained peer neighbors on the duration of exclusive breastfeeding up to 6 months and its prevalence. In addition, it also measures the characteristic factors of lactating mothers who are predictors of cessation of exclusive breastfeeding. The novelty of this study was its accompaniment intervention, where the companion is a peer neighbor closest to the lactating mother. Companions are trained using validated guidelines (Irmawati *et al.*, 2022). The implementation of this research is expected to provide accessible accompaniment, plenty of time available, and consistency in providing support to breastfeeding mothers, to increase the success of more exclusive breastfeeding up to 6 months.

Method

This study used a quasi-experimental design. Purposive sampling was used to select respondents, namely breastfeeding mothers of single babies with normal delivery. A total of 98 breastfeeding mothers were selected as respondents. A total of 49 trained peers were selected as accompaniment of lactating

mothers with inclusion criteria, having to read and having previous infant breastfeeding experience. One trained peer neighbor accompanies one lactating mother. Before providing accompaniment, peer neighbors were given breastfeeding training by local primary health care midwives using validated modules. The study received permission from the ethics committee of the Faculty of Public Health Diponegoro University No. 22/EA/KEPK-FKM/2022.

The intervention group (n=49) received breastfeeding accompaniment from childbirth to 6 months postpartum. Meanwhile, the control group (n=49) received standard postpartum services. Accompaniment was carried out through scheduled home visits 15 times, with the following details: (a) 5 visits one month after birth, with details of 2 times in the first week and once a week in the 2-4th week after birth; and (b) 10 visits, carried out every 2 weeks at the age of 2-6 months after birth. Activities at the first five visits to infants aged 1 month after birth were to provide informational support and practical assistance. The duration of exclusive breastfeeding is monitored weekly by giving 3 questions to lactating mothers including: (1) Is the mother still breastfeeding her child this week? (2) Has your baby been given food or drink other than breast milk in the last 24 hours? If given, what is the type? The monitoring results are recorded in the breastfeeding cohort sheet. A survival analysis with Kaplan Meier's plot was used to compare the survival curve of exclusive breastfeeding between the two groups during the 24 weeks postpartum. Cox proportional hazard regression was used to analyze the effect of predictor variables on cessation of exclusive breastfeeding. Statistical analysis using SPSS 26.0.

Result and Discussion

A total of 147 participants consisting of 49 trained peer neighbors and 89 lactating mothers completed the study for 24 weeks, the unit analysis in this paper focused on lactating mothers as many as 89 respondents were divided into two groups, the intervention group (n=49) and the control group (n=49). The homogeneity test of respondent characteristics

Table 1. Baseline Characteristics Associated With Maternal Factors in the Intervention and Control Groups

Category	Intervention		Control		p
Marital Age					
< 20	1	2,0	0	0	
20-35	41	83,8	48	98,0	
>35	7	14,2	1	2,0	
Education					
Elementary	7	14,2	4	8,2	
Intermediate	29	59,2	36	73,5	
High	13	26,6	9	18,3	
Employment					
Unemployment	31	63,3	28	57,1	
Employment	18	36,7	21	42,9	
Parity					
First	15	30,6	20	40,8	
Second	19	38,8	26	53,1	
Third	15	30,6	3	6,1	
Baby gender					
Male	23	46,9	26	53,1	
Female	26	53,1	23	46,9	
Baby birth weight					
2500-3500 gr	31	63,3	29	59,2	
>3500 gr	3	6,1	1	2,0	

Source: Primary Data, 2022

showed that there was no significant difference in respondent characteristics between the two ($p > 0.05$), except for the maternal age ($p=0.001$) (see Table 1).

Kaplan Meier’s curve showed that the intervention group consistently had a higher probability of exclusive breastfeeding at all measurement time points than the control group (Log-rank test; $\chi^2: 28.6$ $p < 0.001$) (see

Figure 1).

The average duration of exclusive breastfeeding in the intervention group was longer, namely 21.63 weeks (CI=20.50-22.76) than the control group was 15.85 weeks (CI=14.86-17.62). The prevalence of EBF in the control group began to decrease at week 6 while the intervention group at week 10. At week 14, the prevalence of EBF in the control

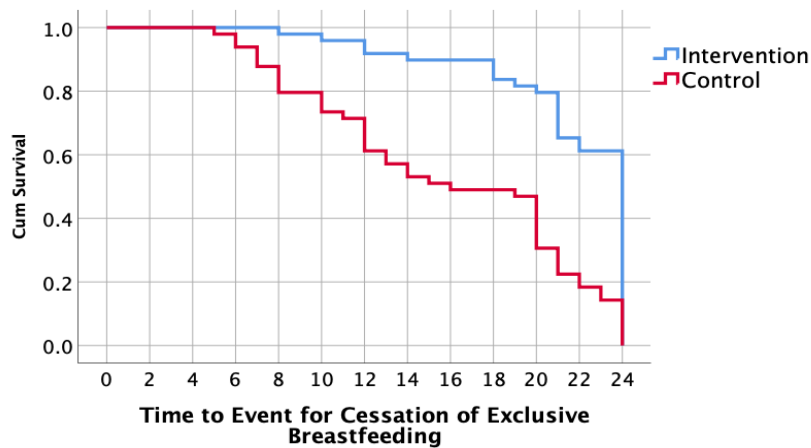


Figure 1. Kaplan Meier Curve Survival estimates the duration of Exclusive Breastfeeding.

group continued to decrease when compared to the intervention group (79.5% vs. 44.8%). At week 22 the intervention group's EBF prevalence was 3.1 times higher than that of the control group (63.2% vs. 20.4%). In the last week of measurement (week 24) the prevalence of the EBF intervention group was almost 5 times higher than the control group (59.1% vs. 12.2%). The prevalence of cessation of EBF in the control group was highest at week 12 as much as 11.9% and at week 22 as much as 54.5%.

We used the Cox Proportional Hazard Test to indicate several maternal characteristic variables that were predictors of cessation of exclusive breastfeeding. The results of the Cox Proportional Hazard test showed that the intervention group had cessation of exclusive breastfeeding 0.32 times ($p < 0.001$) compared to the control group. Lactating mothers with higher education had cessation exclusive breastfeeding 0.18 times ($p < 0.001$) compared to lactating mothers with elementary education. Unemployment lactating mothers had cessation exclusive breastfeeding 0.53 times ($p = 0.026$) compared to employment lactating mothers.

We also found trend consistency in the Kaplan-Meier curve between the intervention and control groups based on the classification of maternal characteristics. The prevalence

of EBF within 24 weeks in the intervention group was associated with lactating mothers who had higher education (22.6%) and unemployed lactating mothers (22.8%). The lowest achievement in the intervention group was associated with lactating mothers with elementary education (18.8%).

Several interventions were carried out to increase the duration of EBF, such as group consultations by lactation counselors (van Dellen *et al.*, 2019), consultations through online websites by professional support groups (Gonzalez-Darias *et al.*, 2020), and counseling education program group by nurses in the hospital (Lee *et al.*, 2019). The types of interventions provided by health professionals were group accompaniment to lactating mothers. The results of the study found that obstacles that were often encountered in assisting lactating mothers were too much workload, and insufficient time and material to provide individual counseling (Dubik *et al.*, 2021). Interventions to increase the duration of exclusive breastfeeding were also carried out by peers, accompaniment by one peer in a group of lactating mothers carried out on a paid basis can increase the duration of exclusive breastfeeding (Ara *et al.*, 2018). Similarly, the support provided by a group of community leaders succeeded in increasing the duration

Table 2. Cox Proportional Hazard Ratio Analysis for Exclusive Breastfeeding

Variables	Category	Hazard Ratio	95% CI		Sig
			Lower	Upper	
Group	Intervention Control (*)	0.32	0.19	0.52	0.000
Maternity Age	Reproductive Non-reproductive (*)	0.68	0.32	1.44	0.319
Education	Higher Elementary (*)	0.18	0.07	0.44	0.000
Employ	Employment (*) Unemployment	0.53	0.31	0.92	0.026
Parity	Multipara Primipara (*)	0.92	0.92	0.55	0.757
Baby age	1month (*) 2month 3month	0.78 0.67	0.49 0.40	1.23 1.12	0.293 0.133
Baby gender	Male Female (*)	0.911	0.61	1.36	0.648

Source: Primary Data, 2022

Table 3. EBF Prevalence Rates at 24 Weeks Stratified by Maternal Factors According to the Intervention Type

Category	Intervention		Control		Log Rank
	No	% (95% CI)	No	% (95% CI)	
Maternity Age					
Reproductive	10	21.6 (20.2 - 22.8)	1	15.9 (11.00-11.00)	0.000
Non-reproductive	39	21.7 (20.6 - 22.9)	48	11.0 (14.16-17.75)	0.000
Education					
Higher	13	22.6 (20.7 - 24.4)	9	11.5 (5.07-17.92)	0.000
Elementary	7	18.8 (15.0 - 22.6)	4	15.0 (10.97-19.02)	0.000
Employment					
Employment	31	22.8 (22.2 - 23.4)	28	16.0(13.65-18.41)	0.000
Unemployment	18	19.8 (17.8 - 21.8)	21	15.6 (12.91-18.31)	0.000
Parity					
Multipara	11	21.6(19.8 - 24.1)	20	15.3 (12.53-18.06)	0.000
Primipara	38	21.9 (20.6 - 22.7)	29	16.2 (13.91-18.56)	0.000

Source: Primary Data, 2022

of exclusive breastfeeding (Susiloretni *et al.*, 2015). The reviewed literature found that the accompaniment carried out by lay workers was still very diverse concerning who the companion is, the method, and the schedule of the visit (Sudfeld, Fawzi and Lahariya, 2012).

ATPN is effective in increasing the duration of exclusive breastfeeding, this finding is also in line with several previous studies, that the accompaniment of lay workers can increase knowledge, skills, and success of exclusive breastfeeding (Assibey-Mensah *et al.*, 2019). Good knowledge and skills contribute to the success of exclusive breastfeeding. As well as the results of research conducted by Nugraheni that the breastfeeding training provided can increase the knowledge and skills of breastfeeding lay workers as companions for breastfeeding mothers for the success of exclusive breastfeeding (Nugraheni *et al.*, 2022). The study also found that the education and employment status of breastfeeding mothers were predictors of exclusive breastfeeding success, as were previous studies that lactating mothers who had higher education were more likely to breastfeed exclusively than those with lower education (Thu *et al.*, 2012). Similarly, the results of other studies found that lactating mothers who returned to work were less likely to breastfeed exclusively (Agboado *et al.*, 2010), after postpartum became one of the determinants of the failure to breastfeed exclusively (Khan and Kabir, 2021).

Conclusion

ATPN intervention effectively increases the duration of exclusive breastfeeding by up to 6 months. The implications of this study are very important in designing more effective intervention programs, with companions being peers who live closest to lactating mothers, so that accompaniment can continue on an ongoing basis. Accompaniment materials according to the needs of breastfeeding mothers. Where the companion has been trained using a validated breastfeeding module.

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