

# The Effect of Support Model of Women's Religious Organization on Maternal Skills in The Practices of Exclusive Breastfeeding and Infant Stimulation

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## ABSTRACT

**Objective:** The first 1000 days of life are a critical period. Therefore, EBF (exclusive breastfeeding) and infant stimulation are crucial in determining short- and long-term life quality. The EBF has not reached the expected target. The research objective was to determine the effect of women's religious organizations' support model on maternal skills in providing breastfeeding and infant stimulation practices. **Methods:** This research used a quasi-experimental method with pre-and post-control design. The samples consisted of 210 pregnant women, selected based on the Cluster Sampling technique. Based on the cluster sampling technique, they were divided into 105 pregnant women > 38 weeks (intervention area), and 105 pregnant women > 38 weeks (control area). The intervention group attended a workshop on EB, breastfeeding, breastfeeding based on religious, moral teaching, and infant stimulation under the guidance of the trained cadres of Aisyiyah organization. The cadres assisted them until the baby was six months. Data were collected by questionnaire and observation sheet. Data were analyzed by using t-test and multiple linear regression models (ANCOVA). Most of mothers involved in the intervention group had knowledge on EBF and breastfeeding in 27.6 units better (b = 27.6; p = 0.001), breast care skills in 38.17 units better (b = 38.17; p = 0.001), breastfeeding skills in 34.15 units better (b = 34.15; p = 0.001), skills for lactation 35.39 units better (b = 35.39; p = 0.001), mother's attitude 24.36 units better (b = 24.36; p = 0.001), knowledge regarding infant stimulation in 34.89 units better (b = 34.89; p = 0.001), infant stimulation skills 0-3 months in 35.6 units better (b = 35.6; p = 0.001), infant stimulation skills 3-6 months 31.76 units better (b = 31.76; p = 0.001), and statistically these were significant. The women's religious organization support model, which comprises community health workers training, lactating mothers training, and advocacy, effectively improves maternal skills in the practice of EBF and infant stimulation.

**Keywords:** Training, workshops, lactation management, infant stimulation.

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## Introduction

The sustainable development agenda in 2030 is a strategic plan to prepare qualified Human Resources (HR) [1]. Talented human resources must be prepared since pregnancy, childbirth, and infancy. The first 1000 living days last a lifetime. Every child deserves an optimal experience [2; 3]. Breast milk (ASI) affects children's cognitive development [4; 5; 6; 7; 8]. Breast milk is the perfect food for babies until the first two years of age. Breastfeeding has many health benefits for both mother and baby up to future time [9]. Practices of infant and child feeding have a strong impact on

children's nutritional status under two years of age and reduce their risk of infectious disease and death [10]. Breastfeeding is important to save lives and improve women's and babies' health and well-being worldwide [11]. The mother should breastfeed her child for two full years to complete the breastfeeding mother [12]. She initiated early and exclusive breastfeeding for up to two years [13]. She should be provided with counseling and support for exclusive breastfeeding [14]. In 2017, countries found it difficult to maintain the Baby-Friendly Hospital Initiative (BFHI) program, in which its implementation often depends

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on a certain individual and external resources [15].

Many attempts were made to encourage mothers to breastfeed their children. However, exclusive breastfeeding both in Indonesia and in other countries is still low. The average rate of exclusive breastfeeding in the world in 2015 was 46% in 2016. It fell to 38% [16]. The coverage of exclusive breastfeeding in Indonesia has decreased, namely; 2015 (55.07%), 2016 (29.5%), and 2017 (35.73%). Therefore, in 2018, the role of service facilities for maternity and newborn child (10 successful breastfeeding steps) needs to be addressed [17].

Concerning community-based models of postpartum care, there was a clinically significant increase in problem and satisfaction levels. Community based multidisciplinary postpartum clinics are feasible for implementing and providing suitable and highly satisfying care for both mother and infant [18].

Thus, to implement the above program, support from other parties is needed, namely women's religious organizations. This is following the conditions of our region, namely a religious area.

The purpose of this study was to determine the effect of women's religious organizations on maternal skills in breastfeeding practice and infant stimulation.

### Research Design

This research used a quasi-experimental method with pre- and post-control design. The intervention was carried out through workshops on breast milk, breastfeeding, breastfeeding according to religion, and one-day stimulation. The cadres of "Aisyiyah provide the workshops," a women's religious organization, totaling 25 persons. These cadres were previously given training for four days on breast milk, breastfeeding, breastfeeding according to spiritual teachings, and stimulating babies. The research site to intervene was the area of *Puskesmas* (center of community health), Cerme, Dadap Kuning, Benjeng, and Metatu. Meanwhile, the control site was *Puskesmas* Kedamean, Karang Andong, Kesamben Kulon, and Puskesmas Dapet, Gresik Regency, East Java, Indonesia. The research was conducted from April 2019 to January 2020.

### Population and Sample

The population was all pregnant women with gestational age > 38 weeks in the intervention and control areas. They were followed for up to 6 months after birth. The sample consisted of 210 pregnant women (for each region 105 pregnant women). They were selected based on the Cluster Sampling technique. Data in the form of knowledge on breast milk, breastfeeding, infant development stimulation, and maternal attitudes were collected using a questionnaire. Meanwhile, data in cadre skills regarding breast care, correct breastfeeding, lactation, stimulation skills for infants aged 0-3 months, and skills to stimulate infant development at 3-6 months of age were obtained using an observation sheet (checklist).

### Research Variables

The dependent variables I were: (1) mothers' knowledge on EBF and breastfeeding, (2) mothers' skill in breast care (3) mother's skill in proper breastfeeding, (4) mother's skill in lactation, (5) Mothers' attitude. Then, the independent variable is a workshop on EBF, breastfeeding, and breastfeeding based on the religious, moral teaching for mothers in the intervention area.

The dependent variables II were: (1) knowledge on stimulation of infant development, (2) stimulation skills for infants from 0-3 months, (3) stimulation skills for infants 3 - 6 months, (4) mother's attitude. The independent variable was the workshop on infant development, infants' stimulation 0 - 3 months, and infants' stimulation 3 - 6 months to mothers in the intervention area.

### Data Analysis

This study used univariate, bivariate, and multivariate analysis. Univariate analysis was used to describe the characteristics of the continuous data sample and categorical data. Bivariate analysis was used to compare the mothers' knowledge of EBF, breastfeeding, and stimulation and mothers' skills on lactation and stimulation for the intervention and control areas before the workshop, using the t-test. Multivariate analysis was used to assess the strength of the intervention's effect using multiple linear regression analysis (ANCOVA) to control for the effect of differences in the value of the dependent variable between the intervention group and the control group before the intervention.

### Ethical Approval

This research was conducted with the approval obtained from the Health Research Ethics Committee, Faculty of Medicine, Sebelas Maret University, Surakarta, with number: 424 / UN27.6 / KEPK / 2019. This research also received permission from Bakesbangpolinmas for the provincial and district levels. Respondents of the study also provided informed consent.

## RESULT AND DISCUSSION

### Bivariate Analysis

Table 1 showed that the mean value of cadre knowledge on EBF and breastfeeding after training is better (mean = 88.06; SD = 3.39) than that before training (mean = 60.02; SD = 9.94). The mean of cadre knowledge on the infant stimulation after training is better (mean = 92.08; SD = 3.55) than that before training (mean = 63.08; SD = 11.11).

The mean value of breast care skills after training (mean = 89.04; SD = 4.98) is better than that before training (mean = 51.04; SD = 15.97). The mean value of proper breastfeeding skills after training (mean = 91.28; SD = 5.46) is better than that before training (mean = 48.08; SD = 8.73).

The mean value of infant stimulation skills (0 - 3 months) after training (mean = 87.4; SD = 6.6) is better than that before training (mean = 54.32; SD = 11.68). The mean value of infant stimulation skills (3-6 months) after training (mean = 86.28; SD = 2.47) is better than that before training (mean = 65.16; SD = 9.78), and the mean value of cadre's attitude after training (mean = 93.4; SD = 5.96) is better than that before training (mean = 65.16; SD = 4.05). All variables were statistically significant ( $p < 0.001$ ).

Aisyiyah cadres provided social support. According to Clark (2016), social support is a resource provided by others [19]. The low social support level is 3x (three times), more likely to consume artificial milk 24 hours [20]. The supports that have been provided are (1) proactive and reactive telephone support. The result showed that *telephone support was significantly more likely to continue exclusive breastfeeding* [21]. There was no difference for women who begin breastfeeding before and after the intervention at 6-8 weeks in

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the underdeveloped region [22]. (2) professional support for home visits and childcare. The result showed that the

intervention breastfeeding group was longer (more than six weeks) than the control group, although these are fewer, which are breastfed for up to 4 months [23].

**Table 1.** Knowledge and skills of Aisyiyah cadres before and after training

Variable	n	Mean	SD	p
<b>Knowledge on EBF and Breast-feeding:</b>				
Before Training	25	60.20	9.94	< 0.001
After Training	25	88.06	3.39	
<b>Knowledge of infant stimulation:</b>				
Before Training	25	63.08	11.11	< 0.001
After Training	25	92.08	3.55	
<b>The practice of Breast Care:</b>				
Before Training	25	48.84	12.31	< 0.001
After Training	25	94.24	4.85	
<b>The practice of Exclusive Breastfeeding:</b>				
Before Training	25	48.08	8.73	< 0.001
After Training	25	91.28	5.46	
<b>Practice how to Lactating:</b>				
Before Training	25	48.84	12.31	< 0.001
After Training	25	94.24	4.85	
<b>Skills of infant stimulation (for infant 0-3 month)</b>				
Before Training	25	54.32	11.68	< 0.001
After Training	25	87.4	6.6	
<b>Skills of infant development stimulation (for infant 3-6 months):</b>				
Before Training	25	56.28	9.78	< 0.001
After Training	25	85.28	2.47	
<b>Cadre's Attitude:</b>				
Before Training	25	65.16	4.05	< 0,001
After Training	25	93.4	5.96	

Most people have not known on EBF, breastfeeding, and lactation management. Thus, it is necessary to disseminate them to the community. So far, counseling is conducted by health workers, while health workers carry out so many service tasks. That is why women's organizations need to contribute to disseminating knowledge on EBF, breastfeeding, and lactation management to increase exclusive breastfeeding. Breastfeeding can consistently reduce wasting and stunted [50]. The colostrum content in EBF can make a baby's immune from infection [51, 52].

According to Aisyiyah's Articles of Association, Aisyiyah's Organization is a Muhammadiyah women's organization that carries out the da'wah movement of amar makruf (inviting goodness) and nahi munkar (preventing evil) and tajdid. The activities that will be carried out are: (1) carrying out the da'wah of amar makruf (inviting goodness), preventing evil, and tajdid in all life areas. (2) embody programs and carry out charity and similar activities. (3) carry out the policies and responsibilities of the charity business program of Aisyiyah's leadership. Thus, Aisyiyah's organizational support needs to be taken into account.

During the training process, the cadres of Aisyiyah can carefully and enthusiastically follow the explanation and practice; they seem happy to join breastfeeding and stimulation. Besides, the material of breastfeeding, which was related to religious teaching, really touches the cadres' feelings. Because mothers are obligated to treat breastfeeding, and EBF is a miracle given by God to humans and God willing, it is a mercy blessing. Hopefully, there will be ongoing socialization and support from another women's

organization.

Table 2 showed that the mean value of knowledge on EBF and breastfeeding before the workshop in the intervention group was almost the same as that of the control group. These were 56.55 and 51.91. It was statistically significant ( $p < 0.001$ ) and both, the mean values of knowledge on the infants' stimulation in the intervention and control groups before the workshop were also the same (50.23) and (55.95). It is statistically significant ( $p < 0.001$ ).

The mean of breast care skills in the intervention group was lower (41.11) than that in the control group (53.29); it is statistically significant ( $p < 0.001$ ). The mean of proper breastfeeding skills before the workshop in the intervention group is lower (43.64) than that in the control group (56.22), and it is statistically significant ( $p < 0.001$ ). The mean of milking skills before the workshop in the intervention group was almost the same (51.79) as that in the control group (55.24), and it is statistically significant ( $p = 0.013$ ).

The mean of developmental stimulation skills for infants aged 0 - 3 months before the workshop in the intervention group (51.44) was lower than that of the control group (57.32). It is statistically significant ( $p = 0.001$ ). The mean of developmental stimulation skills for infants aged 3-6 months before the workshop in the intervention group (49.59) was lower than that of the control group (57.32), and it is statistically significant ( $p < 0.001$ ). The mean of maternal attitudes before the workshop in the intervention group was higher (66.46) than that of the control group (59.62), and it is statistically significant ( $p < 0.001$ ).

**Table 2.** t-test results on differences in the knowledge on breastfeeding, stimulation, and lactation management, and infant stimulation and maternal attitudes between the intervention group and the control group, before the intervention (workshop)

Independent Variable	N	Mean	SD	p
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<b>Knowledge of EBF and breastfeeding:</b>				
Control	105	51.91	8.54	<0.001
Intervention	105	56.55	10.49	
<b>Knowledge of Stimulation:</b>				
Control	105	55.95	9.43	<0.001
Intervention	105	50.23	8.33	
<b>Skills of Breast Care:</b>				
Control	105	53.29	12.04	<0.001
Intervention	105	41.11	5.05	
<b>Breast-feeding Correctly:</b>				
Control	105	56.22	10.82	<0.001
Intervention	105	43.64	10.50	
<b>Lactation:</b>				
Control	105	55.24	11.01	0.013
Intervention	105	51.79	9.03	
<b>Skills of Infant stimulation (infant for 0-3 month):</b>				
Control	105	51.44	47.89	<0.001
Intervention	105	57.32	4.76	
<b>Skills of Infant development stimulation (infant for 3-6 month):</b>				
Control	105	57.32	9.17	<0.001
Intervention	105	49.59	5.31	
<b>Mother's attitude:</b>				
Control	105	59.62	9.88	<0.001
Intervention	105	66.47	4.64	

The intervention group of co-fostering for the first child was significantly more likely to breastfeed for up to 12 weeks [24]. The breastfeeding duration was longer and tended to breastfeed for the first six months after delivery than the control group [25, 26]. (4) Semi-intensive and intensive counseling support by trained colleagues showed the following results. Intensive group mothers were 4x more likely to breastfeed exclusively than the control group [27]. Forms of breastfeeding support include advising, support groups, and networks [28; 29; 30]. Breastfeeding support optimally requires actions starting from policies, attitudes, social norms, and services [31].

Overall, breastfeeding knowledge was good, 55.3%; very good, 30.7%; not good, 14%. However, exclusive breastfeeding was still not maximal [47]. Although 93.6% of research participants have heard on exclusive breastfeeding, only 34.7% carried out the recommended duration. Breastfeeding exclusivity was suboptimal when compared to the recommendation of WHO [48]. Knowledge of breastfeeding is the most important factor in exclusive breastfeeding behavior and allows mothers to positively affect women's attitudes to breastfeed exclusively [49].

Table 3 showed that mothers who received the intervention had knowledge of EBF and breastfeeding 27.6 units better than mothers who did not get the intervention. Its

difference is statistically significant ( $b = 27.6$ ;  $p = 0.001$ ).

Mothers who got the intervention had 38.17 units of breast care skill. This breast care skill was better than those of mothers who did not get the intervention, and the difference was statistically significant ( $b = 38.17$ ;  $p = 0.001$ ). The former had a proper breastfeeding skill of 31.76 units. This right breastfeeding skill was better than that of the latter who did not get the intervention, and the difference was statistically significant ( $b = 34.15$ ;  $p = 0.001$ ). The former's ability to express breastfeeding was in 35.39 units. This was better than that of the latter, and the difference was statistically significant ( $b = 35.39$ ;  $p = 0.001$ ).

Furthermore, mothers who got the intervention had an average attitude of 24.36 units. This score is better than the mothers who did not receive the intervention, and the difference is statistically significant ( $b = 24.36$ ;  $p = 0.001$ ). So the intervention is effective in improving the skills of mothers in performing breast care, breastfeeding properly, expressing breast milk, and improving mother's attitude.

How important is the promotion and support of breastfeeding to achieve sustainable development goals? In this relation, the first two years of life is a very difficult period in the development of early communication skills, during which responsive attention skills appear between 8 (eight) months to 15 (fifteen) months of the infant [2,53].

### Multivariate Analysis

**Table 3** The results of multiple linear regression analysis on the effect of interventions on changes in knowledge on EBF and breastfeeding, breast care skills, proper breastfeeding, lactation, and mother's attitude.

Independent Variable	Coefficient of Regression (b)	CI 95%		p
		Lower limit	Upper limit	
<b>Knowledge on EBF and Breastfeed:</b>				
Constant	20.26	13.40	27.11	0.001
Intervention	27.60	25.20	29.99	0.001
Knowledge before	0.26	-137	-382	0.001

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n observation	210			
R <sup>2</sup>	74.73%			
<b>P</b>	0.001			
<b>Skills of Breast Care:</b>				
Constant	-10.31			
Intervention	38.17	-17.19	- 3.43	0.003
Skills before	0.54	35.89	40.45	0.001
n observation	210	0.44	0.63	0.001
R <sup>2</sup>	84.46%			
<b>P</b>	0.001			
<b>Skills of Proper Breastfeeding</b>				
Constant	2.97			
Intervention	34.15	- 3.84	9.80	0.392
Skills before	0.39	31.95	36.35	0.001
n observation	210	0.30	0.48	0.001
R <sup>2</sup>	82.86%			
<b>P</b>	0.392			
<b>Skills of Lactation</b>				
Constant	- 14.87			
Intervention	35.39	- 21.66	- 8.08	0.001
Skills before	0.64	33.32	37.47	0.001
n observation	210	0.54	0.74	0.001
R <sup>2</sup>	85.11%			
<b>P</b>	0.001			
<b>Attitude</b>				
Constant	-19.78			
Intervention	24.36	-25.27	-14.30	0.001
Attitude before	0.92	22.78	25.95	0.001
n observation	210	0.82	1.01	0.001
R <sup>2</sup>	91.14%			
<b>P</b>	0.001			

Table 3 showed that mothers who received the intervention had knowledge of EBF and breastfeeding 27.6 units better than mothers who did not get the intervention. Its difference is statistically significant (b = 27.6; p = 0.001). Mothers who got the intervention had 38.17 units of breast care skill. This breast care skill was better than those of mothers who did not get the intervention, and the difference was statistically significant (b = 38.17; p = 0.001). The former had a proper breastfeeding skill of 31.76 units. This right breastfeeding skill was better than that of the latter who did not get the intervention, and the difference was statistically significant (b = 34.15; p = 0.001). The former's ability to express breastfeeding was in 35.39 units. This was better than that of the latter, and the difference

was statistically significant (b = 35.39; p = 0.001).

Furthermore, mothers who got the intervention had an average attitude of 24.36 units. This score is better than the mothers who did not receive the intervention, and the difference is statistically significant (b = 24.36; p = 0.001). So, the intervention is effective in improving the skills of mothers in performing breast care, breastfeeding properly, expressing breast milk, and improving mother's attitude.

How important is the promotion and support of breastfeeding to achieve sustainable development goals? In this relation, the first two years of life is a very difficult period in the development of early communication skills, during which responsive attention skills appear between 8 (eight) months to 15 (fifteen) months of the infant [2,53].

**Table 4** Results of multiple linear regression analysis on the effects of interventions toward knowledge changing on infant stimulation, (0-3 months) infant stimulation skills and (3-6 months) infant stimulation skills

Independent Variable	Coefficient of regression (b)	CI 95%		p
		Low limit	Upper limit	
<b>Knowledge of Infant Stimulation:</b>				
Constant	- 6.57			
Intervention	34.89	-13.53	0.38	0.064
Attitude before	0.52	32.98	36.80	0.001
n observation	210	0.42	0.62	0.001
R <sup>2</sup>	86.22%			
<b>P</b>	0.001			
<b>Skills of Infant Stimulation aged 0-3 months</b>				
Constant				
Intervention	-29.78	-33.83	-25.7	0.001



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Skills before n observation	35.6 0.95 210	32.91 0.92	37.21 0.98	0.001 0.001
R <sup>2</sup>	95.37%			
P	0.001			
<b>Skills of infant stimulation aged 3-6 months</b>				
Constant	3.81			
Intervention	31.76	-2.32	9.96	0.222
Skills before n observation	0.40 210	29.93	33.59	0.001
R <sup>2</sup>	85.7%	0.32	0.49	0.001
P	0.001			
<b>Attitude</b>				
Constant	-19.78			
Intervention	24.36	-25.27	-14.30	0.001
Attitude before n observation	0.92 210	22.78	25.95	0.001
R <sup>2</sup>	91.14%	0.82	1.01	0.001
P	0.001			

Table 4 showed the results of multiple linear regression analysis (ANCOVA) related to the effect of the intervention on knowledge development about infant stimulation, stimulation skills for infants 0-3 months and stimulation skills for infants 3-6 months.

The results of table 4 showed that the knowledge about infant stimulation reaches 34.89 units. This was better than the achievement of mothers who did not get the intervention, and the difference was statistically significant ( $b = 34.89$ ;  $p = 0.001$ ). Thus, the intervention is effective in increasing the mother's knowledge about infant stimulation. Mostly, mothers who got the intervention had the skills to stimulate infants 0 - 3 months (35.6 units). This was better than those who did not get the intervention, and the difference was statistically significant ( $b = 35.6$ ;  $p = 0.001$ ). Furthermore, mothers who got intervention had the ability to stimulate infants 3 - 6 months (31.76 units). This was better than those who did not get the intervention, and the difference was statistically significant ( $b = 31.76$ ;  $p = 0.001$ ). Thus, the intervention is effective in improving the skills of mothers to stimulate babies aged 0-3 months and babies 3-6 months.

Evenly, mothers who got the intervention had attitude (24.36 units). This was better than those who did not get the intervention, and its difference was statistically significant ( $b = 24.36$ ;  $p = 0.001$ ). Thus, the intervention was effective in improving mothers' attitudes in doing; stimulation of infants (aged 0-3 months) and stimulation of infants (3-6 months).

The important thing that needs to be done is to provide prenatal education to mothers and fathers. Related to this importance is to recommend the strengthening of public health education campaigns for breastfeeding [32]. Maternal and child health care workers should evaluate the mother's knowledge and attitudes at each visit [33]. Any breastfeeding for 12 months or longer is predicted to decrease diabetes risk of type 1 [34; 35; 36; 37; 38].

The risks or consequences of not breastfeeding are changes in posture development, changes in posture, and changes in maxillofacial development [39]. The children who were breastfed showed a smaller oral cavity than those who used the bottle (OR: 0.43; 95% CI: 0.23 - 0.8) [40; 41]. In 2018, according to WHO (2018), 10 steps have changed. Health care providers play an important role in education and encourage mothers to initiate and undertake continuous

breastfeeding [42].

Long-term outcomes and professional end-users in health and social care should be involved in the development and evaluation of measures [43]. Adequate facilities are needed to promote and support breastfeeding [44]. It is important for mothers and families to know the aspects of development that are monitored, lack of stimulation can lead to deviations in the growth and development of children and even persistent disorders [45]. Knowledge about exclusive breastfeeding is important to know since before pregnancy, so that mothers have a mature postpartum readiness to do exclusive breastfeeding [51].

### Conclusion

The women's religious organization support model, which comprises community health workers training, lactation mothers training, and advocacy, is effective in improving maternal skills in the practice of EBF and infant stimulation.

### Authors' Contributions

Siti Hamidah was responsible for planning, conducting research, administration, and research funding. Bhisma Murti provided input on research methods, validity, and reliability of research instruments. Harsono Salimo provided input on Pediatric Health Sciences on EBF, breastfeeding, stimulation, child development, and the validity of research instruments. Sri Mulyani gave input on pregnant women's care and social approaches, including the success of breastfeeding.

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### Competing Interests

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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