

# The Influence between Breastfeeding Conditions with Breastfeeding Mothers Characteristics toward the Usage of Lactation Amenorrhoea Method (LAM) as Contraception

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**Keywords:** Influence, Breastfeeding Conditions, Characteristic, Lactation Amenorrhoea {Method, Contraception

**Abstract:** The low coverage of exclusive breastfeeding for 6 months caused the national target of exclusive breastfeeding to be 40% unachieved. Whereas exclusive breastfeeding can reduce infant mortality in Indonesia and it can also be used as natural contraception. This research type was an analytic study with case control design. The study was conducted from August to December 2018. The population of this study were all breastfeeding mothers who have babies aged 6-12 month. The study sample amounted 44 breastfeeding mothers, consist of 22 cases and 22 controls whereas the case group was giving exclusive breastfeeding to baby but they did not experience lactation amenorrhoea and the control group was giving exclusive breastfeeding to the baby, they experienced lactation amenorrhoea. Primary data collection methods obtained through direct interviews on research subjects. The research instrument was standardized questionnaire. Data analysis used univariate analysis, bivariate with chi-square test and multivariate analysis with multiple simple logistic regression test. The analysis results indicated dominant variable influencing the usage of LAM as contraceptive for breastfeeding mothers was occupational variable because it has ( $p = 0.015$ ; OR = 10.962 95% CI 1.529-75.283), it means that breastfeeding mothers who work have 11 times greater risk who did not use LAM as contraceptive compared to mothers who do not work.

## 1 INTRODUCTION

Lately, women in Indonesia, especially young mothers, are actively promoting exclusive breastfeeding. However, the facts show that exclusive breastfeeding is still not optimal. Coverage of exclusive breastfeeding for 6 months is still low which caused the national target of exclusive breastfeeding to be 40% was not achieved. The United Nations Children's Fund (UNICEF) states that 30,000 babies' deaths in Indonesia and 10 million babies' deaths in the world each year can be prevented through exclusive breastfeeding. Kamlesh Tiwari, et al (2018) found that there were no breastfeeding mothers conceived within the first six months of giving birth to their babies and it was only 4% of mothers had evidence of pregnancy especially after 10 months after giving birth.

Some experts conclude that mothers who have knowledge or get counseling about LAM have more desire to use LAM as contraceptive, and working

mothers can influence exclusive breastfeeding to their babies, as well as education and income which become significant predictor variables with LAM as contraceptive method (Teklehay manot Huluf Abraha, et al., 2018; Aparna Sridhar and Jennifer Salcedo, 2017; Rubeena Zaka, et al., 2018; Edibe Pirincci1, et al., 2016; Chelsea M. Cooper, et al., 2018; Shawn Malarcher, et al., 2016; Alla al Hadaby, et al., 2018; Amira A. El-Houfey, et al., 2017; Sevgi Ozsoy, et al., 2017).

The above data illustrates that the problem of using LAM as contraceptive needs to get good attention, considering the usage of LAM as a contraceptive is influenced by exclusive breastfeeding. In order to get more precise picture, it is needed an analysis of the breastfeeding conditions effect with characteristics (knowledge, education, occupation, parity, and social economy) for breastfeeding mothers toward LAM usage as contraception.

## 2 METHODOLOGY

This research type is an analytic study with case control design. This research was conducted from August to December 2018. The research population were all breastfeeding mothers who have babies aged 6-12 months at Kasih Ibu Maternity Clinic Kasih Dusun VII Street Deli Tua Sub-district Deli Serdang Regency. The sample consisted of 44 breastfeeding mothers that consisting of 22 cases and 22 controls namely the case group were breastfeeding mothers who gave exclusive breastfeeding to their babies but they did not experience lactational amenorrhoea.

The research sampling technique was purposive. Primary data collection methods obtained through the distribution of questionnaires directly on the research subject. The research instruments were standardized questionnaires. Data analysis used univariate, bivariate analysis with chi-square test and multivariate analysis with multiple logistic regression tests. The research roadmap is as follows:

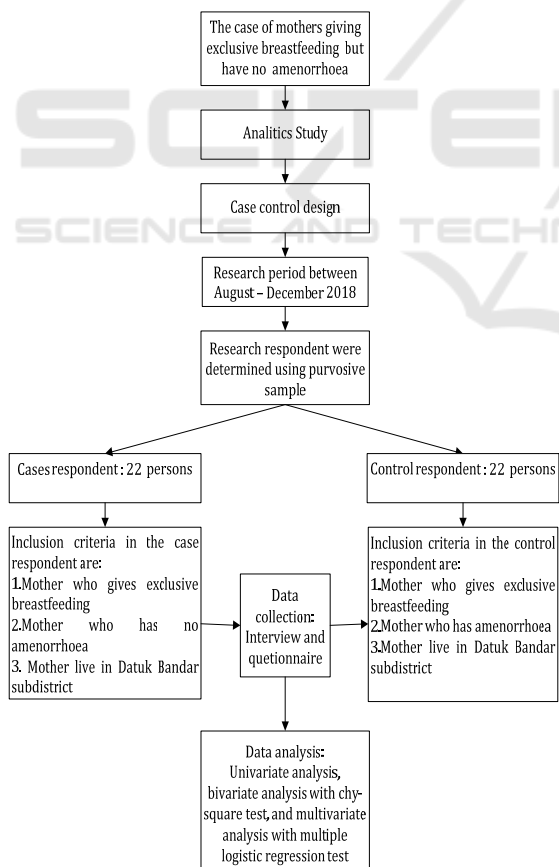


Figure 1: Research Roadmap



Figure 2. Research on the Effect of Breastfeeding Conditions and Characteristics of Breastfeeding Mothers on LAM usage as Contraception.

## 3 RESULTS

Based on the table below, it can be explained that:

- a. Conditions for breastfeeding women who used the lactation amenorrhoea method should pay attention to breastfeeding, namely breastfeeding immediately after giving birth, breastfeeding without schedule, breastfeeding without bottles or nipples, did not take supplements, and still gave breastmilk to babies. If one of the criteria was not met then the condition of breastfeeding was not good.

0. Good

1. Not Good

The majority of breastfeeding cases were not good as many as 18 cases (81.8%) and in control group the majority of breastfeeding conditions were good as much as 13 (59.1%). Statistical test results obtained p value = 0.013 means that there was an influence of the breastfeeding condition on LAM usage as a contraceptive for breastfeeding mothers. From the analysis results, it also obtained value (OR = 6.5 with 95% CI 1,640-25,759), it means that breastfeeding condition which was not good has a risk of 6.5 times greater risk of breastfeeding mothers did not use LAM as contraception compared with the breastfeeding conditions was good.

- b. Knowledge

Mother's knowledge questionnaire consisted of 8 questions. The scoring is done based on provisions, the correct answer is given score of 1 and the wrong answer is given score of 0. So that the highest total score was 8. The highest possible score is 8 and the lowest possible score was 0.

0. The level is good if the score obtained > 50% of the total score (5-8)
1. The level is not good if the score is obtained < 50% of the total score (0-4)
- The cases majority of breastfeeding mothers' knowledge were poor (14.6%) and in the control group the majority of breastfeeding mothers' knowledge were 13 (59.1%). Statistical test results obtained p value = 0.227 meaning that there was not knowledge effect on LAM usage as contraception in breastfeeding mothers.
- c. Education, the highest formal school level ever taken and completed by respondents which obtained a graduation mark that is categorized into 3 groups:
- 0 = Low (elementary - junior high)  
1 = High (High School - College)
- In the case of education group, the majority of breastfeeding low mothers were 16 (72.7%) and in the control group, the majority of breastfeeding mothers had high education (14.6%). Statistical test results obtained p value = 0.034 meaning that there was an influence of education on the LAM usage as contraceptive in breastfeeding mothers. From the analysis it was also obtained the value (OR = 4.7 with 95% CI 1,299-16,761) meaning that mothers with low education have 4.7 times greater risk did not use LAM as contraception compared to mothers who have higher education.
- d. Occupation is an activity carried out by the mother outside the home with the aim to find basic necessities of life. The duration of mother works is known from she leaves home. Categorized as:
- 0 = did not work outside the home  
1 = work outside the home
- The cases majority of breastfeeding mothers who worked as many as 17 (77.3%) and in the control group the majority of breastfeeding mothers did not work as many as 14 (63.6%). Statistical test results obtained p value = 0.015 meaning that there was occupation effect on the LAM usage as contraceptive in breastfeeding mothers. From the analysis also obtained value (OR = 5.9 with 95% CI 1,586-22,328) meaning that mothers who work outside the home have 5.9 times greater risk did not use LAM as a contraceptive compared to mothers who did not work outside the home.
- e. Parity is the children number who have been born by respondent both born alive and stillborn. Parity is categorized:
- 0 = primipara (woman who gave birth to a child, who is big enough to live in the outside world).  
1 = multipara (women who have given birth to child more than once).
- The parity case group of multiparous majority breastfeeding mothers as many as 15 (68.2%) and in the control group parity of breastfeeding mothers majority were 12 (54.5%). Statistical test results obtained p value = 0.223 meaning that there is no effect of parity on LAM usage as contraceptive for breastfeeding mothers. From the analysis results also obtained value (OR = 2.6 with 95% CI 0.753-8.784) means that exposure (parity) was a protective effect or reduces the risk of LAM usage as contraceptive for breastfeeding mothers.
- f. Sosoo - economic is the income amount from basic and additional work which is obtained by respondents and the head of the family in average of one month. Classified into two, namely the value of City Minimum Wage (CMW) of Tanjungbalai City and below the CWN value. The criteria for income are as follows:
- 0 = Income above CMW > Rp. 1.835.000  
1 = Income below the CMW < Rp. 1.835.000
- The majority of socio-economic case groups of breastfeeding mothers were Rp. > 1,835,000 as many as 16 (72, 7%) and majority of socioeconomic control group of breastfeeding mothers were Rp. > 1,835,000 as many as 13 (59.1%). Statistical test results obtained p value = 0.068 means that there was not socioeconomic influence on the LAM usage as breastfeeding mothers' contraceptive. From the analysis results also obtained value (OR = 3.8 with 95% CI 1,086-13,661) means that mothers who have income Rp. < 1,835,000 have 3.8 times greater risk did not use LAM as contraceptive compared to mothers who have income Rp > 1,835,000.

Table 1: Effect of breastfeeding conditions with breastfeeding mothers characteristics on MAL usage as contraception

R	Conditions for breastfeeding		Education		Occupation		Parity		Socio-economic		knowledge	
	K	C	K	C	K	C	K	C	K	C	K	C
1	1	1	1	0	1	1	1	0	1	1	1	0
2	1	0	1	0	1	0	1	1	1	1	0	1
3	1	1	1	0	1	0	1	1	1	0	1	0
4	1	0	0	0	1	1	1	0	1	0	0	1
5	1	1	1	0	1	0	0	0	0	1	1	0
6	1	1	0	1	0	0	1	0	0	1	1	1
7	1	0	0	0	1	0	0	0	0	1	0	0
8	1	0	1	0	1	0	1	1	1	0	1	1
9	1	1	1	1	0	0	0	0	1	0	1	1
10	0	0	0	0	1	1	1	1	1	1	0	0
11	1	1	0	1	1	1	1	0	0	0	0	1
12	0	0	1	1	1	0	1	0	1	0	1	1
13	1	1	0	0	1	1	1	1	1	0	0	0
14	1	0	1	1	1	0	0	0	0	1	1	1
15	1	0	1	0	0	0	1	1	1	1	1	0
16	0	0	1	0	1	0	1	1	1	0	0	0
17	1	0	1	1	1	1	0	0	1	0	1	0
18	1	1	1	0	0	0	1	1	1	0	1	0
19	0	0	1	1	1	1	0	1	0	0	0	0
20	1	0	1	0	1	0	1	0	1	1	1	0
21	1	1	1	0	0	1	0	1	1	0	1	0
22	1	0	1	1	1	0	1	0	1	0	1	1

Multivariate analysis was performed to analyze the effect of independent variables (conditions of breastfeeding, knowledge, education, employment, parity and socioeconomic), with the dependent variable (Lactation Amenorrhoea Method). Multivariate analysis used multiple logistic regression analysis. Before conducting multivariate analysis, the selection of variables which will become candidates for the multivariate model is done first. Variables that become multivariate candidates are independent variables with p values <0.25 in bivariate analysis.

Table 2: Selections of Model Candidates for Multivariate Modelling Phase

No	Variable	p value
1.	Breastfeeding Condition	0,013
2.	Education	0,227
3.	Knowledge	0,034
4.	Occupation	0,015
5.	Parity	0,223
6.	Sosialekonomi	0,068

Based on the results of multivariate analysis with multiple logistic regression test shows that in the modeling analysis, all variables of the conditions of breastfeeding, education, occupation and socioeconomic are significant to the use of the Lactational Amenorrhoea Method as contraceptive for breastfeeding mothers with a value of p <0.05. Thus, the most dominant variable influencing the use of the Lactation Amenorrhoea Method as contraception in breastfeeding mothers is the occupational variable (p = 0.015; OR = 10.962 95% CI 1.529-75.283) meaning that breastfeeding mothers who work have a 11 times greater risk of not using the Lactational Amenorrhoea Method as a contraceptive compared to mothers who do not work.

Table 3: Analysis Results of Multiple Logistic Regression Test

Independent Variable	B	Sig	Exp(B)	95% CI
Breastfeeding Condition	2.136	0.019	8.466	1.421-50.453
Education	1.664	0.056	5.280	0.959 - 29.083
Occupation	2.394	0.015	10.962	1.596 - 75.283
Socio Economic	1.859	0.040	6.420	1.092 - 37.756

This study showed that there was an influence of breastfeeding conditions toward the LAM usage as contraceptive for breastfeeding mothers. The analysis also obtained value (OR = 6.5 with 95% CI 1,640-25,759) meaning that breastfeeding mothers with not good conditions have 6.5 times greater risk did not use LAM contraceptive compared to good conditions. The study results are in line with Kamlesh Tiwari, et al research (2018) that is found there was not breastfeeding mothers be expecting within the first six months after they gave

birth to their babies and it was only 4% of mothers had evidence of pregnancy especially after 10 months after giving birth.

The data is presented in the table below:

Table 4: The Effect of Breastfeeding Conditions on the Use of the LAM as Contraception for Breastfeeding Mothers

	Breastfeeding Conditions				<i>p</i> valv <i>e</i>	OR (95% CI)
	Cases		Control			
	N	%	n	%		
Not good	18	81,8	9	40,9	0,013	6,5(1,640-25,759)
good	4	18,2	13	59,1		
<b>Total</b>	<b>22</b>	<b>100</b>	<b>22</b>	<b>100</b>		

The statistical test results obtained  $p$  value = 0.387, it was concluded that there was no knowledge influencetoward the LAM usage as contraceptive for breastfeeding mothers. The analysis results also obtained value (OR = 2.5 with 95% CI 0.750-8.522) means that exposure (knowledge has a protective effect or reduces the LAM risk as contraception for breastfeeding mothers. The study results are in line with Kasmiandriani's study (2014) showed that 113 respondents who had good knowledge (62%), sufficient knowledge (9.7%) and lack knowledge (84%). The total respondents with positive attitude and applied LAM contraception only 19 respondents (16.8%) and the rest (82.3%) did not applied LAM contraception.

This study is also in line with Chelsea M. Cooper, et al research (2018) stated the relationship perception between breastfeeding, LAM, menstrual return, and recognition of timely food / mother's way to recognize the relationship between breastfeeding and birth spacing, but there were gaps in understanding and LAM usage. The mothers expressed their belief that women are protected from pregnancy while they are breastfeeding, regardless of the frequency or breastfeeding duration. Prolonged breastfeeding (within a few months) is associated with delayed menstruation. However, women also discuss that some women return menstruation even when they are still breastfeeding. Some women say they have heard that breastfeeding helps birth spacing, but they don't trust this method because other women breastfeed and don't see menstruation but are still pregnant.

Some constraints related to the low application of exclusive breastfeeding and the low number of mothers who use the Lactation Amenorrhoea Method

(LAM) as contraceptive during breastfeeding include the lack of confidence in the mother that breast milk is sufficient for her baby, the mother back to work after they finished the maternity leave which causes the use of bottled or formula milk in a manner early so shift the breastmilk position. Besides that, the incessant promotion of formula milk, both through health workers and mass media also had an effect.

The LAM effectiveness is very high around 98% if it is used correctly and meets the requirements of being used during the first 6 months after giving birth and exclusively breastfeeding (without providing additional food). The effectiveness of this method is also very dependent on the frequency and intensity of breastfeeding.

This study showed there was an effect of education on the LAM usage as breastfeeding contraceptive. The analysis also obtained value (OR = 4.7 with 95% CI 1,299-16,761) meaning that breastfeeding mothers with low education have 4.7 times greater chance did not use LAM as contraceptive compared to higher education. It is strengthened by Nursalam theory(2003), that education can influence one's behavior in motivating oneself to actively participate in development. The different levels of education for mothers in this study affect the mothers desire to use LAM contraception.

Occupation is the most dominant variable that influences the LAM usage because it has ( $p = 0.015$ ; OR = 10.962 95% CI 1.529-75.283) meaning that breastfeeding mothers who work have 11 times greater risk did not use lactation amenorrhoea method as contraception compared to mothers who does not work.

This study is in line with Amira A. El-Houfey, et al research (2017) stated that there were many factors that affect exclusive breastfeeding such as, lack of knowledge, lactation problems, poor families and social support, social norms, shame, occupation and child care and health services. Data showed that 61.1% of US mothers who have children under the age of three years old are employed. It is known that mothers who are not employed are more than twice as likely to breastfeed for six months as mothers who work full time.

The study results are in line with Kasmiandriani research (2014) showed that 113 respondents who have good knowledge (62%), sufficient knowledge (9.7%) and lack of knowledge (84%). All respondents with positive attitude and applied LAM contraception, there were only 19 respondents

(16.8%) and the rest (82.3%) did not apply LAM contraception.

According to Lawrence Green's theory cited in Notoatmodjo (2015), which underlies the emergence of breastfeeding mothers' behavior in conducting LAM as contraceptive namely predisposing factors, which are manifested in knowledge, attitudes, beliefs, confidence, values, and so on, enabling factors, which are manifested in physical environment, the availability or unavailability of health facilities, and the reinforcing factors manifested in the attitudes and behavior of health workers or other officers, who are group reference of community behavior.

Quynh-NhiThi Le, et al research (2018) states LAM is based on the frequency of breastfeeding, including nighttime breastfeeding. Women who leave their babies and work outside home, difficulty in maintaining this frequency usually increases their failure rate.

The study results are in line with the Tesfayi research (2008) only dividing mothers into two, namely working mothers and mothers who did not work. It was found that mothers who did not work had risk of 0.98 times longer to return menstruation than mothers who worked.

The study results indicated that there was no influence of parity toward LAM usage as breastfeeding mothers' contraceptive. The analysis results also obtained value (OR = 2.6 with 95% CI 0.753-8.784) meaning that exposure (parity) is a protective effect or reduces the risk of using LAM contraception in breastfeeding mothers. The study results are in line with Sevgi Ozsoy, et al research (2017) states that one-third of mothers are primiparous and 66.5% of mothers have breastfeeding experience. From the study results 38.9% of mothers said that they received knowledge about the effects of breastfeeding contraception and 68.9% of mothers received this knowledge from nurse. There were 17% of mothers received this knowledge reported that breastfeeding was contraception and 1.8% of mothers reported that it was sometimes as contraceptive. Around 41.3% of mothers thought that they would be able to used breast milk as contraception method.

In this study it was stated that there was no influence of income toward LAM usage as contraceptive for breastfeeding mothers. The analysis results also obtained value (OR = 3.8 with 95% CI 1.086-13.666) means that exposure (income) is a protective effect or reduces the risk of LAM usage as contraceptive for breastfeeding mothers.

This study is in line with Amira A. El-Houfey, et al research (2017) which states the factors associated with positive or negative effects on the level of exclusive breastfeeding: internationally there are many factors associated with poor people to provide exclusive breastfeeding and it must be considered when it is investigated the reasons for lower levels than recommended and the duration of breastfeeding were identified at most.

Tespayi study was based on DHS (Demographic and Health Surveys) data for women with amenorrhoea in the first 12 months after their birth in Dominic, it resulted smaller HR of 1.10 (1.03-1.17 95% CI) held by the rich social economic status.

The cross tabulation result between mother's work and income shows that 67.55% of low-income mothers are housewives (not working), so they will have more time for their babies. Mothers with low socioeconomic status tend to have less access to meet food needs for their babies. So they will provide breastmilk with more frequencies and longer durations to meet those needs. Increasing the frequency and duration of breastfeeding will result a longer duration of lactational amenorrhoea.

Based on study results, the most dominant variable influencing the LAM usage as contraceptive for breastfeeding mothers is the occupational variable because it has ( $p = 0.015$ ; OR = 10.962 95% CI 1.529-75.283) meaning that breastfeeding mothers who work have 11 times greater risk do not use LAM as contraceptive compared to mothers who do not work .

## 4 DISCUSSION

It can be concluded that the effect of breastfeeding conditions with the characteristics of breastfeeding mothers toward the LAM usage as contraception is as follows:

- a. Variables that have been proven to influence the lactation amenorrhoea method as contraception in breastfeeding mothers are the conditions of breastfeeding, education, employment and socioeconomic.
- b. Variables that have not been proven to influence the lactation amenorrhoea method as contraception in breastfeeding mothers are knowledge and parity.
- c. Multivariate results indicate that occupation is the most dominant variable that influences the LAM usage at Kasih Ibu Maternity Klinik Kasih Street Hamlet.VII Deli Tua Sub District because

having ( $p = 0.015$ ; OR = 10.962 95% CI 1.529-75.283) means that breastfeeding mothers who work have 11 times greater risk do not use LAM as contraceptive compared to mothers who do not work.

## ACKNOWLEDGEMENTS

This research was supported by Health Institute of Deli Husada Deli Tua, Health Institute of Medistra Lubuk Pakam, Sembiring General Hospital Foundation, and Medistra Foundation, Indonesia.

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