

Breast Milk Determinant Factors of Breastfeeding Mothers at Public Health Center of Talaga Jaya Gorontalo Regency

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Abstract

This research is aimed to determine the determinant factors (nutrition status, breast care, lactation counseling, drug consumption, the ability of baby to suckle) on breast milk production, at public health center of Talaga Jaya, Gorontalo Regency, Gorontalo Province. The research design was Cross Sectional Study with observation unit on 276 of breastfeeding mothers with 6 – 24 month babies, they are taken with simple random sampling. The data were analyzed with univariate, bivariate in nature with chi-square test, and multivariate with logistic multiple linear regression. The results indicate 4 variables (nutrition status, breast care, lactation counseling, drug consumption, the ability of baby to suckle with significant score $p < 0,05$), while the breast care is the determinant factor for breast milk production. Nutritional status, lactation counseling, the ability of a baby suckle, and breast care is the determinant of the production of breast milk, while breast care is the major determinant of production of breast milk.

Keyword: Breast milk production, nutrition status, lactation counseling

1. Introduction

Breast milk (BM) production undergoes deficiency, this condition may affect the decrease of IQ point. This research was conducted by Anderson in America found that babies given BM since birth have 5 times IQ higher than those given formula milk. They found that babies suckled less than one month have averagely 99,4 as adults, suckled for two to three months have IQ

averagely 101,7, while those given BM until 9 months have the highest score 106.

Babies born in world, only 36% get exclusive breast milk giving until 6 months can prevent death of 1,3 millions of infants under five years old. A research in Ghana shows 16% of baby death can be avoided by giving BM since their first birth. The achievement of giving exclusive BM still under national target that is exclusive BM giving for 0 – 5 month babies amount to 27,2%.¹

Lactation success is influenced by previous condition and during pregnancy. Pre-pregnancy is determined by the development of breast when born and puberty. During trimester II pregnancy the breast swells due the growth and differentiation from lobulo alveolar and breast epithelial cells. During the swelling of breast prolactin hormone and placenta lactogen actively function to product BM. There are many factors causing the BM production decrease. Such as bad nutrition of mothers, babies cannot suckling effectively, lack of frequency of suckling, mothers' endocrine defect.²

Based on the obtained data the achieved target of exclusive BM in Gorontalo Province is still under the national coverage target, so the researcher are interested in doing researches in order to find out the nutrition status, breast care, lactation counseling during pregnancy, consuming drugs during breast feeding and ability of babies to suckle in work area of public health center of Talaga Jaya Gorontalo Regency of Gorontalo Province.

2. Material and method

Study design

This research was conducted in working area of Public Health Center of Talaga Jaya Gorontalo Regency of Gorontalo Province. The Research used *cross sectional study* design.

Population and Samples

Population in this research were all breastfeeding mothers who have babies aged 6 – 24 month. The samples amount to 276 persons were taken by using *Purposive Sampling* technique i.e the samples were taken from mothers who gave BM and met criteria which had been determined by researchers.³

Method of Data Collecting

Data were obtained by directly interviewing respondents and oriented to questionnaires which had been prepared with questions to get information about variables that had association with BM production. To

collect primary data the respondents were interviewed at their respective house.

Data Analysis

Characteristic data, dependent and independent variables were processed by using SPSS. To know determinant factors of BM production at public health center of Talaga Jaya Gorontalo regency used univariate test, bivariate with chi-square and multivariate with logistic multiple linear regression test.

3. Results

The results reveal that from the total 276 breastfeeding mothers, majority of age group are 25 – 29 years old (29,7%), their educational levels were primary school (42%). Most of the respondents were housewives (90,0%). Table 1 describe distribution of characteristics of respondents.

Table 1. Distribution characteristics of respondents in Telaga Jaya Public Health Center Gorontalo, Gorontalo Province in 2013

Common Characteristics	Number (n)	Percentage (%)
Age groups (years)		
< - 19	10	3,6
20 - 24	63	22,8
25 - 29	82	29,7
30 - 34	72	26,1
35- 39	40	14,5
40 - >	9	3,3
Education		
No school	30	10,9
Elementary/primary school	116	42,0
Junior high school	45	16,3
Senior high school	57	20,7
College	28	10,1
Occupation		
Government employee	12	4,3
Self-employed	12	4,3
Labour/ employee	1	0,4
Housewife	251	90,9

Source : Primary data

The results indicate the mothers' good nutrition status is 87,3% breast care with good category 79,7%, obtaining lactation counseling 92,0%, do not consume Birth Control pills (KB) 86,6%, and ability of the

babies to suckle with sufficient category is 66,3%. Table two describe distribution of breastfeeding mothers according to the determinant factor.

Table 2. Distribution of breastfeeding mothers according to the determinant factor in the Talaga Jaya Public Health Center Gorontalo, Gorontalo Province in 2013

No	Variable	Category	n	%
1	Breast milk production	Deficient	154	55,8
		Sufficient	122	44,2
2	Maternal nutrition status	Deficient	35	12,7
		Good	241	87,3
3	Breast care	Poor	56	20,3
		Good	220	79,7
4	Lactation counseling	No	22	8,0
		Yes	254	92,0
5	Drug Consumption	No	239	86,6
		Yes	37	13,4
6	Babies ability to suckle	Poor	93	33,7
		Good	183	66,3

Source : Primary data

The research results find out mothers' nutrition with regression logistic test score $B = 1,107$, $p = 0,009$, with the risk value $\text{Exp}(B) = 3,026$, the score of breast care $B = 1,223$, with $p = 0,001$, the risk value through $\text{Exp}(B) = 3,433$, score of lactation counseling $B =$

$1,432$ with $p = 0,001$, $\text{Exp}(B) = 4,187$, score of drug consumption $B = 0,393$, with $p = 0,301$ (not significant) for the risk scored through $\text{Exp}(B) = 1,482$, ability of babies to suckle $B = 0,677$, $p = 0,015$ with $\text{Exp}(B) = 1,969$ (table 3).

Table 3. Multivariate test results of the determining factors for breast milk production in the Talaga Jaya Public Health Center Gorontalo, Gorontalo Province in 2013

Variable	B	Wald	DF	p	OR	95% C.I for Exp(B)	
						Lower	Upper
Maternal nutrition status	1,107	6,897	1	0,009	3,026	1,324	6,914
Breast care	1,233	11,159	1	0,001	3,433	1,665	7,079
Lactation counseling	1,432	4,725	1	0,030	4,187	1,151	15,226
Drug consumption	0,393	1,070	1	0,301	1,482	0,703	3,121
Babies ability to suckle	0,677	5,943	1	0,015	1,969	1,142	3,394

Source : Primary data

4. Discussion

This research is focused on mothers' nutrition during pregnancy, breast care during pregnancy, lactation counseling during pregnancy, and consumption of drug during suckling and ability of babies to suckle. Theoretically all variables give contribution in producing BM. Nevertheless, based on the analysis results it is found that from the 5 determinant variables, 4 variables significantly have relation with BM production i.e. nutrition status, breast care, lactation counseling, and babies' ability to suckle.

Pregnant mother status means a condition as a result of consuming nutritious food during pregnancy, nutrition consumption for pregnant mother functions as food for fetuses and as composition to fulfill the needs of BM production. The amount of BM production depends on the amount of fat supply heaped during pregnancy in a certain time.⁴

Various research results in any countries indicate: Picciano's research identifies that to fulfill adequate nutrition during pregnancy would give good influence to pregnancy and lactation period. Research result conducted by Kumar, et al shows that severe anemia on pregnant mothers will negatively affect the blood circulation to babies during suckling.

Statistic test results indicate there is relationship between nutrition status during pregnancy and production of BM ($p = 0,018$) with the amount of contribution ($\text{Phi} = 1,42\%$), as well as with multivariate test by using logistic regression showing $B = 1,107$, $p = 0,009$, with the risk evaluated with $\text{Exp}(B) = 3,026$, this score means if mothers undergo bad nutrition during pregnancy will give significantly insufficient BM production ($p = 0,009$) with the risk 3,026 times larger than not undergo bad nutrition.

Breast care is one of the important things to consider as preparation to suckle in the future. Breast should be prepared during pregnancy so that when a baby was born it immediately function well.⁵ Breast care is an

activity consciously and regularly performed to look after breast during breastfeeding period. The good and right breast care has an important role in increasing BM production.⁶

Based on the research results of Montji (2006) group of mothers given explanation and demonstration 60%, performing breast care with good category 60% and 40% performing breast care with less good category.⁷ the group of mothers given explanation only without explanation and demonstration 40% performed breast care with good category and 60% performed breast care with less category.

The results of logistic regression test indicate that score of $B = 1,223$ with $p = 0,001$, with the risk amount through $\text{Exp}(B) = 3,433$, this score means that by not performing the breast care would give possibility to BM production significantly ($p = 0,001$) with the risk of production of BM is less scored with $\text{Exp}(B) = 3,433$ bigger than with those performed breast care.

The pregnancy counseling starting from antenatal visit by explaining to mothers about benefit, stages, procedures, and myths about pregnancy, and delivery including early breastfeeding. So by counseling, hopefully, pregnant mothers can understand the importance of pregnancy and delivery as well as early breastfeeding and ready to perform it.⁸

Sisk, et al.,⁹ in their research stated that after lactation counseling 85% of respondents give exclusive BM. Conclusion of research results in Pakistan states that with lactation counseling can increase exclusive breastfeeding at 4-6 months.

Statistic test results indicate the relationship between the implementation of lactation counseling and BM production ($p = 0,003$) with contribution (Φ) = 1,81%, as well as multivariate test by using logistic regression indicate B score = 1,432, with $p = 0,001$, less than α score = 0,005, showing there is a significant relationship with the risk which is scored through $\text{Exp}(B) = 4,187$, this score means that by performing counseling maximally during pregnancy will give chance to produce BM significantly ($p = 0,030$).

The production of BM is quicker when the breast is empty after breastfeeding. Babies should be adapted with the needed production of milk. If babies need more BM they should suckle frequently.

Breastfeeding is without schedule (on demand), because babies will determine their own need. Breastfeeding with schedule will give bad effect, since the suckling is very influent on stimulation of the next BM production. By on demand breastfeeding, will avoid possibility of many problems arise.¹⁰ The research result in U.S. shows mothers give BM 8 times in 24 hours are able to maintain BM production.¹¹

Analysis result with $Betha = 0,677$, $p = 0,015$ (significant) means that babies' ability decrease to suckling, with risk score $\text{Exp}(B) = 1,969$ times bigger than when babies have ability to suckling well.

5. Conclusion and suggestion

Based on the research results, conclusion can be drawn as follows; nutrition status during pregnancy constitutes factor that have relationship with BM production, breast care during pregnancy has relationship with BM production, variable of breast care factor during pregnancy is variable which has a strong relationship with BM production with score $p = 0,001$.

Suggestion could be forwarded to Health Ministry to develop breastfeeding counseling training program for health officers specially midwives. Health officers have to demonstrate the breast care to pregnant mothers so that the breast is ready for breastfeeding process. Leading and advising the pregnant mothers who are performing ANC during lactation counseling to consume balance menu nutrition so that the lactation period normally run

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7. References

1. Riskesdas, 2010. Riset kesehatan Dasar, Health Research and development agency, Ministry of Health of Indonesia.
2. Maria. 2012. Cara Mudah Merawat Payudara Selama Kehamilan. (<http://www.beritaterkinionline.com/2012/04/cara-mudah-merawat-payudara-selamakehamilan.html>), accessed November 12, 2012.
3. Lemeshow, Stanley et.al. *Besar Sampel dalam Penelitian Kesehatan*. Translated by Diby Pramono.1997. Gadjah Mada University Press.Yogyakarta.
4. Proverawati, A., Asfuah, S. 2009. Buku Ajar Gizi dan Kebidanan, Nuha Medika: Yogyakarta.
5. Lusa. 2009. Anatomi dan Fisiologi Payudara, (<http://www.lusa.web.id/anatomi-dan-fisiologipayudara/>), accessed november 12, 2012.
6. Anonim. 2012. Pentingnya Merawata Payudara Saat Hamil, (<http://www.anakibu.com/ibu/pentingnya->

- merawat-payudara-saat-hamil/) accessed September 10, 2012.
7. Nontji,(2006). Pengaruh Metode Demonstrasi Perawatan Payudara Terhadap kelancaran Pengeluaran ASI. (<http://med.unhas.ac.id/index.php?option=com-content&view=article&id=283;pengaruh-metode-demonstrasi-cara-perawatan-payudara>). accessed Oktober 28, 2012
 8. Judarwanto, Widodo. 2010. "Proses Mekanisme Produksi ASI dan Faktor yang Mempengaruhi Produksinya", (<http://supportbreastfeeding.wordpress.com>), accessed September 12, 2012
 9. Sisk, Paula M. et.al. 2005. Lactation Counseling for Mothers of Very Low Birth Weight Infants: Effect on Maternal Anxiety and Infant Intake of Human Milk, Department of Nutrition and School of Human Environmental Sciences, University of North Carolina, Greensboro, North Carolina; Wake Forest University School of Medicine, Winston-Salem, North Carolina.
 10. Kristiyanasari, W. 2009. ASI, Menyusui dan Sadari. Nuha Medika: Yogyakarta.
 11. Lusa. 2009. Upaya Memperbanyak ASI, (<http://www.lusa.web.id/upaya-memperbanyak-asi/>), accessed November 12, 2012.

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