

Relationship of Nutritional Status with the Smoothness of Breast Milk in Breastfeeding Mothers at Binangun Community Health Centre of Cilacap Regency

Herniyatun^{1*}, Istiana Puspitasari¹, Hastin Ika Indriyastuti¹

¹Universitas Muhammadiyah Gombong, 54412, Indonesia
Corresponding author's email: herni_yatun76@yahoo.com

ABSTRACT

The World Health Organization (WHO) reports that the coverage of exclusive breastfeeding in the world was only 36% in 2016, while the coverage of exclusive breastfeeding in Indonesia was 37.3%. This achievement still does not meet the target that has been set, which is 80%. This study aims to determine the relationship between nutritional status and the smoothness of breast milk in breastfeeding mothers 0-6 months in the working area of Binangun Community Health Centre, Cilacap Regency. This study used an analytical survey design with a cross sectional approach. The sample in this study was breastfeeding mothers 0-6 months in the working area of Binangun Community Health Centre, Cilacap Regency, as many as 123 breastfeeding mothers 0-6 months taken proportionally randomly. The results showed that most of them were not at risk (87.8%), the last education was SMA/SMK (67.5%), non-employment was (90.2%) and parity multipara (61.0%), nutritional status mostly with Obesity I (43.1%), and smooth breastfeeding (92.7%). There is a relationship between nutritional status and the smoothness of breastfeeding in breastfeeding mothers 0-6 months with the acquisition of a significant value using the chi-square test $p = 0.001 (<0.05)$. The conclusions derived from this study enhance the understanding of nutritional status is related to the smoothness of breast milk in breastfeeding mothers 0-6 months.

Keywords: *Nutritional Status; Smooth Breastfeeding*

1. INTRODUCTION

The World Health Organization (WHO) data in 2016 reported that the coverage of exclusive breastfeeding in the world was 36%. According to Basic Health Research data in 2018, the coverage of exclusive breastfeeding in Indonesia was 37.3% [1]. The percentage of infants receiving exclusive breastfeeding in Central Java in 2018 was 65.57% [2]. The average achievement of exclusive breastfeeding in Cilacap Regency in 2017 reached 78.5%. The achievement of exclusive breastfeeding in Indonesia has not met the target set by the Ministry of Health of the Republic of Indonesia, namely 80%.

One of the problems frequently experienced by breastfeeding mothers is breastfeeding smoothness. Insufficient breastmilk can threaten the growth and development of children which later can affect the growth and development of the quality of human resources [3]. Even, insufficient breastmilk has a big impact on the infant. The infants are prone to chronic diseases such as heart disease, high blood pressure, and

diabetes in their adulthood, and can suffer from malnutrition and obesity [4]. Besides, insufficient breastmilk can affect the nutritional status of infants results in an increase in the number of infant morbidity and mortality rates.

The infant mortality rate is one of the goals of the Sustainable Development Goals (SDG's) in part 3 of the 2nd target of 2030, by reducing the infant mortality rate to at least 12 per 1000 live births and the infant mortality rate under 5 years of at least 25 per 1000 live births [5]. Based on the Indonesian Demographic and Health Survey (IDHS) in 2017, the IMR reached 24 per 1000 live births [6]. Smooth breastmilk production can be influenced by the frequency of breastfeeding, birth weight, gestational age at birth, maternal age at delivery, acute illness and stress experienced by the mother, early initiation of breastfeeding (IMD), consumption of alcoholic beverages, smoking, use of contraceptives, breast care, and nutritional status [7].

Nutritional status is one of the factors affecting the smoothness of breastmilk production. Nutritious food intake will be metabolized in the digestive system, then these nutrients are absorbed by the body and flowed into breast milk, and nutritious food can increase milk production [7]. Maternal nutritional status both during pregnancy and after childbirth is important for child growth and development. The good nutritional status of breastfeeding mothers is be characterized by the absence of deficiency diseases in mothers as inadequate nutrition during breastfeeding can affect breast milk production [8].

The results of a preliminary study conducted on Wednesday, January 27, 2021, at the Binangun Health Centre, Cilacap Regency showed a total of 408 infants aged 0-6 months receiving exclusive breastfeeding in 17 villages in the working area of this health centre in May 2021. The number of infants receiving exclusive breastfeeding in one year was 705 infants. This study aims to determine the relationship between nutritional status and the smoothness of breastmilk production in breastfeeding mothers with infants aged 0-6 months in the working area of Binangun Public Health Centre, Cilacap Regency.

2. METHOD

This research is descriptive correlation research using a cross-sectional approach. The sample of this study was

Table 1 Characteristics of respondents

Variable	Total	%
Age		
<20 years or >35 years	15	12.2
20-35 years	108	87.8
Education		
Elementary School	6	4.9
Junior High School	28	22.8
Senior High School	83	67.5
University	6	4.9
Occupation		
unemployed	111	90.2
employed	12	9.8
Parity		
Primipara	48	39
Multipara	75	61

Table 2 shows that 38 respondents (97.4%) have smooth breastfeeding status in mothers with normal nutritional status. A total of 3 respondents (50%) has non-smooth breastfeeding status in mothers with obesity II. The results of the Pearson chi-square test showed a p-

mothers with infants aged 0-6 months in the work area of the Binangun Health Centre, Cilacap Regency. It involved 123 respondents as samples determined using the proportional random sampling technique.

The nutritional status variable was measured by Body Mass Index (BMI) with the formula of weight (kg)/height (m)². The classification of nutritional status of BMI according to WHO are underweight = <18.5, normal weight = 18.5-22.9, overweight = 23-24.5, obesity I = 25-29.9, and obesity II = 30 [1]. Nutritional status is categorized as normal and abnormal (less, excess, obesity I, & obesity II). The variable of smoothness of breast milk production uses 10 statements of indicators based on Guttman scale with yes (1) and no (0) answers.

3. RESULT AND DISCUSSION

3.1. Results

Table 1 shows that the majority of breastfeeding mothers with infants aged 0-6 months aged 20-35 years (87.8%). In terms of education, most respondents were high school education level (67.5%), and the least are elementary school and university (4.9%). Then, concerning occupation, mostly (90.2%) were unemployed and the parity was mostly multipara (61.0%).

value of 0.001 (<0.05) meaning that there is a relationship between nutritional status and breastfeeding smoothness in breastfeeding mothers with infants aged 0-6 months in the working area of Binangun Health Centre, Cilacap Regency.

Table 2 Relationship between Nutritional Status and Breastfeeding Smoothness

Nutritional status	Breastfeeding smoothness in breastfeeding mothers with infants aged 0-6 months				P
	Not smooth		Smooth		
	N	%	N	%	
Less	3	42.9	4	57.1	0.001
Normal	1	2.6	38	97.4	
Excess	2	9.5	19	90.5	
Obesity I	5	10.0	45	90.0	
Obesity II	3	50.0	3	50.0	
Total	14	11.4	109	88.6	

Table 3 shows that out of 84 respondents with abnormal nutritional status, 13 respondents (15.5%) do not have smooth breastfeeding, while 71 (84.5%) have smooth breastfeeding. Then, 39 respondents with normal nutritional status consist of 1 respondent (2.6%) with non-smooth breastfeeding and 38 respondents (97.4%) with smooth breastfeeding. The results of the Pearson chi-square test were significant with a p-value of 0.036

(<0.05). It means that there is a relationship between nutritional status and the smoothness of breastfeeding in breastfeeding mothers in this area. The value of the Odds Ratio (OR) is 6.958 > 1, meaning that it increases the risk, or in other words, mothers with abnormal nutrition have a chance of 6.958 times the risk of non-smooth breastfeeding.

Table 3 The Relationship Between Nutritional Status and Breastfeeding With 2x2 Table

Nutritional status	Breastfeeding smoothness in breastfeeding mothers with infants aged 0-6 months				OR	p
	Not smooth		Smooth			
	N	%	N	%		
Abnormal	13	15.5	71	84.5	6.958	0.036
Normal	1	2.6	38	97.4		
Total	14	11.4	109	88,6		

3.2. Discussion

The results showed that most of the respondents are in the age category of not at risk (20-35 years old) or in good reproductive status. At this age group, the reproductive organs and other organs still work optimally, so the smoothness of milk production is optimal. Mothers aged older than 35 years old are considered at risk of complications in pregnancy, childbirth and breastfeeding. It is because the reproductive organs and other organs have decreased. Besides age, the ability to pump breast milk and inappropriate pumping times can also affect the smooth production of breast milk [9].

Most of the respondents who are not at-risk age group have smooth breastfeeding. Another study by Lorenzo et al explained that breastfeeding behaviour is related to maternal age in which younger mothers tend to be more diligent in breastfeeding their babies compared to older ages. Although age is not directly related to reproductive function, the results show an impact on the milk produced [10].

Concerning education, the majority of the respondents have junior high school level. The level of education of mothers affects mothers' nutritional knowledge and it has an important role in regulating,

selecting and processing the food intake so that the food intake has a balanced nutritional content [11]. It is in line with a study by Hardiani that education is one of the factors affecting the smooth flow of breast milk. The main factor is the lack of knowledge possessed by respondents [12].

Further, a study by Lestari revealed that there is a relationship between knowledge and exclusive breastfeeding with a p-value of 0.008, which is smaller than 0.05 with an estimated RP of 1.86. Therefore, it can be concluded that lack of knowledge has a 1.9 times risk of not practicing exclusive breastfeeding compared to those with good knowledge [13].

Concerning the occupation, most of the respondents are unemployed. The mother's occupation is one of the factors affecting nutritional status. Maqfiro found that the smoothness of breastfeeding can be influenced by the mother's occupation. Working mothers will spend their time doing their jobs, so they don't have enough time to breastfeed their babies and it affects the smoothness of the breastfeeding [14]. Keni revealed that work affects the independence of mothers after giving birth in breastfeeding. Thus, it is necessary to have support and information as well as the implementation of lactation management so that babies will still get breast milk to

fulfil the nutrient needs even though mothers are busy working [15].

In terms of parity, the majority of respondents are multi-para. Mothers who gave birth more than once have the opportunity to produce more breast milk compared to mothers who gave birth once. It is because they have more knowledge and experience about lactation management and the breastfeeding process. Indirectly, parity can affect the process of expression of breast milk and the process of breastfeeding. Factors affecting this process are culture, beliefs, knowledge, and experience gained. The experience gained can increase mothers' knowledge in breastfeeding their children [12].

This study is in line with Leiwakabessy that there is a relationship between maternal parity and smoothness of milk production as indicated by the variable of weight gain of the baby. However, there is no relationship between parity and smoothness of milk production in terms of the quantity of breast milk [9]. Furthermore, Piesesha, et al explains that maternal parity has a relationship with early lactation in which the success of breastfeeding can be determined by early lactation carried out by the mother [16].

The results of the chi-square correlation analysis showed that there is a relationship between nutritional status and the smoothness of breastfeeding in breastfeeding mothers with infants aged 0-6 months in the work area of the Binangun Health Centre, Cilacap Regency. Mothers who have good nutritional status with produce sufficient breast milk and can breastfeed the baby smoothly. Breastfeeding mothers with adequate nutritional status produce more milk than those with low nutritional status or obesity. Breastfeeding mothers with poor nutritional status have problems in producing sufficient breastmilk. Furthermore, breastfeeding mothers with obesity also have difficulty in breastfeeding due to fat obstructing the expression of breastmilk. Good maternal nutritional status can reduce the risk of nutritional status problems in infants because nutritional status is one of the factors affecting the smoothness of breastfeeding [14].

Non-smooth breastfeeding and unfulfilled nutritional needs of the mother can be influenced by the imbalance between the food intake and production of breast milk. The nutritional needs of breastfeeding mothers are higher so they need to increase their food intake and consider their nutritional needs as the production of breast milk is influenced by balanced nutrition intake [17].

The results of this study are in contrast with the previous study by Saimun that involved breastfeeding mothers with infants aged 0-6 months recorded in the Posyandu registration book in the working area of the Tamalanrea Health Centre Makassar as respondents. The results of the logistic regression analysis found a B-value of 0.939, with a p-value of 0.373 (not significant), as well

as a large risk through Exp (B) = 2.557. The risk of the poor nutritional status of the mother can reach 2,557 times greater than those with good nutritional status. Based on the results of this study, it can be concluded that there is no relationship between maternal nutritional status and breast milk production ($p = 0.373$).

The results of this study are in line with the study by Radharisnawati, et al with respondents of breastfeeding mothers with infants aged 0-6 months in the Bahu Health Centre of Manado City in which the results of the chi-square test show a significance level of 95% ($\alpha 0.005$) with a p-value of 0.003. The majority of the respondents can fulfil the nutritional needs and most of them have smooth breastfeeding. There is a relationship between the fulfilment of nutritional needs with the smoothness of breastfeeding at this health centre [17].

The results of this study are also in line with the study by Manggabarani which was conducted on breastfeeding mothers are in the working area of the Maradekaya Health Centre, Makassar City in July-August 2016. The results showed a p-value of (0.024) and the X^2 count of (5.093). Then, it can be concluded that there is a relationship between maternal nutritional status and the smooth production of breast milk with a p-value of 0.024 [8]. Another study by Maqfiro et al, (2017) involving 51 post-partum mothers in the working area of the Sukorame Kediri Health Centre showed a relationship between nutritional status and breastfeeding smoothness (p-value = 0.043) with the correlation coefficient value of 0.334. It indicates that there is a fairly strong relationship between nutritional status and breastfeeding [14].

This study is also in line with Saputri et al involving all post-partum mothers at RSKD Ibu dan Anak Siti Fatimah Makassar on June 15-26 2016 which showed that mothers with good nutrition status produce more breastmilk. The results of the chi-square test obtained a p-value of $0.008 \leq 0.1$. Therefore, it can be concluded that there is a relationship between nutritional status and the smoothness of breastfeeding in post-partum mothers at this health facility [18].

The results of this study showed an Odds Ratio (OR) value of $6.958 > 1$ with increased risks, meaning that mothers with abnormal nutrition have a chance of 6.958 of breastfeeding issues. This study is also in line with a study by Dewi (2019) involving mothers visiting Rumah Sakit Bersalin Mitra Ananda Palembang for getting immunization for their babies. The study showed a relationship between nutrition and smooth milk production with a p-value of 0.000 and an OR value of 88.00. It means that nutrition has an 88.00 times chance of smooth breastmilk production [7].

4. CONCLUSION

There is a relationship between nutritional status and the smoothness of breastfeeding in breastfeeding mothers

with infants aged 0-6 months in the work area of Binangun Health Centre, Cilacap Regency with a p-value of 0.036 and an OR value of 6.958 > 1. It means that mothers with abnormal nutrition have a greater chance of 6,958 times on breastmilk insufficiency.

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