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Obstacles of Breastfeeding Contributed to Stunted Children Status in Barru Regency, South Sulawesi

Lyidia Fanny*

Doctoral Program of Public Health Faculty, Airlangga University, Surabaya, Indonesia

Abstract

Obstacles of breastfeeding towards height of children aged 0-6 were investigated. The purpose of this study was to analyze relationship between obstacles of breast-feeding with the height status of children. This study was a survey research with cross sectional study design. Sample sizes were 201 children, selected systematically and randomly from 15 villages in Barru Regency, South Sulawesi. Nutritional status of children obtained through anthropometric measurements using seca for weight and fixation board for height. The tools used were in good condition and had been previously calibrated. Nutritional intake was obtained using 24-hours recall with multi-pass consumption method. The numerators were nutritionist, while the supervisor worked as lecturer at nutrition department, Health Polytechnic Makassar. This study had been approved by internal ethics committee at nutrition department. Statistical analysis was done using Chi Square with 95% significance.

The results showed that 81% of respondents worked as housewives, 26.9% graduated from secondary education, 65.7% had 1-5 family members per household, 67.7% had lower energy intake, 50.7% had lower protein intake, 42.8% had lower intake of vitamin A, and 80% for low of zinc intake respectively. Nutritional status were in accordance to the index of weight/height, height/age and weight/age, 10.4% were in severe thinness, 12.4% stunted and 2.6% severe malnutrition. The results of statistical analysis showed that there is a relationship between the obstacles of breastfeeding with height status of children ($p<0.002$).

Recommendation from this study are to put more intensive efforts from stakeholders to locate lactation counselors and motivator of breastfeeding in each primary health care and optimalized giving of vitamin A for breastfeeding mother also giving of food that rich of zinc in Barru, such as fish.

Keywords: Obstacles of breastfeeding; Stunted children; Zinc; Vitamin A

Introduction

Healthy, intelligent and productive human resource is assets to a nation. These pre-condition assets can be planned by all government. The government of Indonesia was committed to materialize nutrition improvement efforts which are joint effort between the government and society. They decide priorities plans in the first thousand days of life which started at the time of pregnancy up to 2 years old. Nutritional improvement focused on the range of age between 0-24 months as a priority [1].

Nutritional problems among children aged 0-24 months in Indonesia were malnutrition (based on weight-for-age), severe underweight (based on weight-for-height) and stunted (based on height-for-age) with 5.7%, 6.8 % and 19.2% respectively in 2013. Nutritional problems in children aged 0-24 months in South Sulawesi were malnutrition and severe malnutrition (based on weight-for-age), severe thinness, thinness (based on height-for-age), stunted and shortness (based on height-for-age). Nutritional problem in children aged 0 to 24 months in Barru, South Sulawesi were malnutrition (based on weight-by-height), severe thinness (based on weight-for-age) and stunted (based on height-for-age) which were 10.4%, 2.6%, and 12.4% respectively [2].

Triggers of those mentioned nutritional problems above were poor quality and quantity of nutrient intake. Macro nutrients with low intakes were energy and protein, as well as micronutrient intake. Effort to improve nutrition for 0 to 24 months period is by breastfeeding. Breast milk is an ideal food for babies in all social and economic conditions within communities. The declining trend of exclusive breastfeeding at aged 1,3,4,5, and 6 months were 52.7%, 48.7%, 46%, 42.2%, 41.9%, 36.6% and 30.2% respectively. This data was one of evidence that the quality of the nutritious feeding for children decreases by age.

The cause of the low breastfeeding in Indonesia was related to many factors. Technical factors are factors that directly related to the management of lactation while non-technical factors are factors that associated to the local culture. Study conducted by Fanny et al. [3] in Makassar reported that only 17.65% of mothers that perform precise baby positioning during breastfeeding while the rest were improper. This imprecision resulted in the emergence of obstacles of breastfeeding.

Manjilala [4] conducted a study concerning to obstacle in breastfeeding in Maros Regency, and from the result it was concluded that no solution was found among mothers to solve the problems. Breastfeeding counselors were in existance, although results of their activities still minimal. As a result of these conditions, obstacles of breastfeeding resulted to a significant nutrient intake in children. A study conducted by Siti Nur Rochimiwati, Hikmawati Mas'ud and Jayanti Giringan [5] in Tana Toraja reported that complementary foods at the time of early breast milk was a solution to the obstacles of breastfeeding.

***Corresponding author:** Lyidia Fanny, Doctoral Program of Public Health Faculty, Airlangga University, Surabaya, Tel: 081241784136; E-mail: lydiafanny90@yahoo.com

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From the result of study which conducted by Campbell et al. [6], it was known that quantity of staple foods as a supplier of nutritional intake was associated with the incidence of stunting. The higher quantity of staple foods, the lower the incidence of stunting. This is clearly different according to socio-economic status. Yet another study mentioned that nutritional intake is not the main triggering factors of malnutrition at all times [6-8]. At the age of 0 to 6 months, the staple food is breast milk. Obstacles of breastfeeding were resulting to the incidence of severe malnutrition. The incidence of chronic malnutrition can be known with indicator of nutritional status based on height for age.

Based on the framework above, this study aimed to analyze the relationship between obstacles of breastfeeding with the incidence of stunting in Barru Regency, South Sulawesi.

Methods

Study design and population

Design of this study is a survey, conducted in two districts, 15 villages in Barru Regency. The sample sizes were 201 children aged 0 to 6 months. Samples were randomly selected using a systematic random table.

Informed consent and ethical clearance

All respondents sign informed consent as agreement. This approval was issued by the research committee of Health Polytechnic Makassar.

Data collection

The variables in this study were identity of family, identity of child, nutritional status height-for-age, intake of macro and micronutrients, breastfeeding and obstacles of breastfeeding. Instruments in this study has been tested at 10% of the population and declared fit for use. Enumerators in this study were nutritionist graduates from State Polytechnic Makassar. Enumerators were trained in caution to conduct interviews and anthropometric measurements.

Anthropometric assessment

Anthropometry was measured in accordance to the standard measurement of height and weight of the Indonesia Health Ministry. Anthropometric tool for height used fixation board which was a product of State Polytechnic Makassar in 2010 and was in state of good for use, while for weight, seca was used with precision of 0.01 kg and was also in good state.

Dietetic assessment

Macro and micro nutrient intake was obtained using 24-hours recall method with multi-pass approach. Interviews were performed independently at each respondent houses.

Statistical analysis

Processing and analyzing of nutritional status data was done using WHO Antro 2005 application. Chi Square statistical test used with significance level of 95%.

Result

Characteristic of respondents

Characteristics of respondents in this study is broken down into variables, namely occupation of the mother, mother's educational background, father's educational background, number of family members and number of infant (Table 1).

Variables	n	%
Occupation of Mother		
Employee	15	7.5
Farmer	6	1.5
Housewife	164	81.0
Educational Background of Mother		
Elementary School	40	24.4
Junior High School	54	26.9
Senior High School	53	26.4
University	45	22.4
Educational Background of Father		
Elementary School	59	29.4
Junior High School	41	20.4
Senior High School	69	34.3
University	32	15.9
Number of Family Members		
≤ 5 individual(s)	132	65.7
> 5 individuals	69	34.4
Number of Infant		
1 infant	132	65.7
2 infants	69	34.4

Table 1: Characteristic of respondents in Barru Regency, South Sulawesi.

Characteristics of respondents were considered in relation to nutritional status of children. 81% of mothers worked as housewife and represented occupation of mother in rural area. Generally, occupation of mother in rural area in South Sulawesi was housewife. Aside from being a housewife, mother also has a role to accompany her husband to make a living as well. Major occupation of the populace in Barru Regency, South Sulawesi was farmer.

Majority 26.9% of mothers completed Junior High School, while the same educational level was also very common in the area. Formal educational equity remained a priority in education sector. Improved skills of the population can be pursued with increasing duration of formal education, including groups of women as caregivers of children in Indonesia. Indonesian culture puts mother as primary caregiver. Mother that has good knowledge and education will have a better chance in good childcare.

Number of family members in general was in range of 1 up to 5 individuals (65.7%). This fact was in accordance with the success of the Indonesian government to suppress population increase. Family planning program was quite successful in this area. Tendency to adjust birth spacing was known based on the number of toddler in the family. Families that possess one toddler were 65.7%, although it was known that 34.3% of families had two toddlers.

Macronutrient and micronutrient intake

Macronutrients intake in this study were intake of energy and protein. Micronutrients intake were intake of vitamin A and mineral such as zinc (Table 2).

Variables		n	%
Energy			
	Sufficient	65	32.3
	Low	136	67.7
Protein			
	Sufficient	99	49.3
	Low	102	50.7
Vitamin A			
	Sufficient	115	57.2
	Low	86	42.8
Zinc			
	Sufficient	40	20.0
	Low	161	80.0

Table 2: Macronutrient and micronutrient intake of children in Barru Regency, South Sulawesi.

Nutritional status		n	%
Weight –for-Height			
	Severe thinness	21	10.4
	Thinness	22	10.9
	Normal	133	66.2
	Overweight	25	12.4
Height-for-Age			
	Stunting	25	12.4
	Shortness	10	5.0
	Normal	148	73.0
	Tall	18	9.0
Weight-for-Age			
	Poor	5	2.6
	Severe	11	5.6
	Good	165	84.2
	Overweight	20	7.7

Table 3: Nutritional status of children in Barru Regency, South Sulawesi.

Energy intake was lower than recommended daily requirement, which was 67.7%. Protein intake was also lower than recommended daily requirement with 50.7%. Lower macronutrient intake followed with lower micronutrients intake, vitamin A with 42.8% and zinc were 80%.

Nutritional status

Nutritional status in this study was known through the use of anthropometric indices, ie weight-for-height, height-for-age and weight-for-age (Table 3).

Nutritional problems based on the three indices were still high. Threshold to determine the nutritional problem-free area based on the principle of normal distribution is <5%. The nutritional status facts were according to the weight-for-height, height-for-age and weight-for-age indices, for severe thinness, stunting, and severe malnutrition categories with 10.4%, 12.4%, 2.6% respectively.

Practice of breastfeeding

The practice of breastfeeding in this study was described according to the variable early initiation of breastfeeding, exclusive breastfeeding, duration of breastfeeding, daily frequency of breastfeeding, obstacles of breastfeeding, and current status of breastfeeding (Table 4).

Early initiation of breastfeeding was still very low at 23.4%. The low percentage of early initiation of breastfeeding is not in accordance with UNICEF/WHO recommendation. Exclusive breastfeeding was also very low, just 24.9%. Duration of breastfeeding was not fully in accordance with the rules of science that gives freedom of time for the infants. The percentage of mothers that breastfeed in accordance to willingness of their infants, which was known by the emptiness of breast milk was 34.8%. Obstacles of breastfeeding were found in 23.9% mothers.

Obstacles of breastfeeding and children's nutritional status

Due to the occurrence of obstacles in breastfeeding, the growth of children's height was hampered. From the results of statistical analysis, it was known that there was a relationship between obstacles of breastfeeding with height status of the children ($p<0.002$) (Table 5).

Discussion

Macronutrient and micronutrient intake

Chronology of stunting can be traced from as early as time of birth up to current age. Consumption of nutritious foods that qualify the quality and quantity is required. If the intake of nutrients in the quality and quantity can be fulfilled, it guarantees a good nutritional status [9].

Practice of breastfeeding	n	%
Early Initiation of Breastfeeding		
Yes	47	23.4
No	154	76.6
Exclusive Breastfeeding		
Yes	50	24.9
No	151	75.1
Duration of Breastfeeding		
≤ 15 minutes	66	32.8
> 15 minutes	49	24.4
Up to State of Emptiness	70	34.8
Uncertain	16	8.0
Daily Frequency of Breastfeeding		
≤ 3 times a day	11	5.5
> 3 times a day	71	35.3
Uncertain	119	59.2
Obstacles of Breastfeeding		
Yes	48	23.9
No	153	76.1
Current Status of Breastfeeding		
Yes	160	79.6
No	82	40.8

Table 4: Practice of breastfeeding.

		Obstacles of Breastfeeding			
Nutritional Status		Yes	No		p-value
	n	%	n	%	
Height by Age					
Stunting	13	6.5	12	6.0	
Shortness	3	1.5	7	3.5	0.002
Normal	31	15.4	117	58.2	
Tall	1	0.5	17	8.5	
Weight by Height					
Severe Thinness	8	4.0	13	6.5	
Thinness	3	1.5	19	9.5	0.304
Normal	31	15.4	102	50.7	
Overweight	6	3.0	19	9.5	
Weight by Age					
Poor	0	0.0	5	2.5	
Severe	2	1.0	9	4.5	0.650
Good	39	19.4	127	63.2	
Overweight	3	1.5	12	6.0	

Table 5: Relationship between Obstacles of Breastfeeding with Nutritional Status.

The data in this study demonstrated that the intake of macronutrients and micronutrient also occurs in 0 to 6 months period. The case of low nutritional intake in a study conducted in Tanzania, children who did not receive breast milk due to concern of HIV infection, it was known that the height was hampered gradually [10]. Fulfillment of nutrient intake can be influenced by many variables, including the number of children, education and income [11].

In this period, it had ever been found children with low energy intake, which was as much as 67.7%. Low protein intake even reached 50.7% while low intake of vitamin A was 42.8% and 80% for low zinc intake. Nutritional intake of macronutrients and micronutrients are very critical in this period, could not be fulfilled, particularly those micronutrient that supports height growth. And as a consequence, children height growth was hampered [10,12-15].

Low intake of macronutrients and micronutrients at this period starts from the practice of minimum breastfeeding. Facts related to child feeding practices can be known by various variables namely early initiation of breastfeeding, exclusive breastfeeding, duration of breastfeeding, daily frequency of breastfeeding, obstacles in breastfeeding and breastfeeding status at current time.

Nutritional status

The prevalence of stunted children was still quite high. The findings in this study were consistent with several other studies, both in national and regional level. In Indonesia, the percentage of either stunted children or shortness was 25%, whereas in this study it was obtained as much as 21.3%. Thus it could be concluded that the problem of stunting in this area was a serious nutritional problem and required special concern to any relevant stakeholders. The results of another study which conducted by Manjilala et al. [16] reported the results of their study in Lombok, West Nusa Tenggara, which was as much as 13.9% children aged 9 to11 months were underweight, 5.6% wasting and 16.7% stunting, and for total 25.6% children aged 12 to 24 months were underweight, 5.4% wasting and 34.9% stunting. Masroor et al. [17] reported results of his study in Malaysia, which 28.6% children were stunting at Pakan Regency. Malnutrition also occurred to infants aged less than 24 months.

Breastfeeding practice

Successful child feeding begins with early initiation of breastfeeding practice. The practice of early initiation of breastfeeding was very low with 23.4%. This suggests that the opportunity to obtain the best quality food was only 23.4%. Food other than breast milk is not recommended. Early initiation of breastfeeding is a determining factor in the success of later breastfeeding. Failure in this practice, will lead to the poor practice of feeding children. Good feeding practices will contribute to the improvement of child nutrition. Good knowledge concerning to the child's diet should be followed by practice. From the result of study conducted in Zambia, it is reported that having good knowledge of breast milk, is not enough if it is not applied in daily practice [18]. Nevertheless the results of research in Nepal by Khanal et al. it is known that lack of knowledge and lack of maternal contact with health workers before birth lead to increasement in prelactal feeding. Prelacteal food is any kind of food that supplanted before first breast milk is given to the baby [19].

Exclusive breastfeeding was also low in this study, i.e 24.9%. This data was a logical consequence of unsuccessful early initiation of breastfeeding. Health care practices are often decided unilaterally to feed complementary foods besides breast milk prematurely. Thus, low exclusive breastfeeding will theoretically be correlated with disorders in height growth. The provision of proper information to the mother should start from health care by counselors. This was revealed in a study in Canada in 2015 that wrong perception of mother if not corrected will lead to negative impression and impact on the success of breastfeeding [17]. Basically many factors that affect exclusive breastfeeding especially environmental factors both micro and macro as a form of social support [20]. The results of systematic review in Saudi Arabia showed that a common reason to feed any alternative food other than breast milk is because of insufficient of the latter. Despite of many publications are known to have weak study design and recommended to be corrected through the longitudinal study [21].

Obstacles of breastfeeding and children's nutritional status

Obstacles of breastfeeding, is clearly the strongest factor in hindering for the continuity of feeding children in the period of 0 to 6 months. Children at the age of 0 to 6 months should only be given breast milk alone. If there are obstacles existed in breastfeeding, then the quality of nutritional intake will not be fulfilled. Study conducted by Manjilala [4], stated that the obstacle of breastfeeding continue in every month. For a period of 0 to 1 months, 1 to 3 months and 3 to 6 months, they were 96.1%, 81% and 79.5% respectively. Among them that are having problems, 80% seek assistance to various parties and 60% to health professionals. Precipitating factors in obstacle of breastfeeding in other studies in Makassar mentioned the accuracy of positioning and the baby attachment. Position and attachment of mother during breastfeeding were associated with problems in breastfeeding. Not every maternity clinic possessed lactation counselors that provide support for consulting services [3]. Studies that conducted at maternity clinic in Makassar conveyed that counseling in health services could help overcome obstacles of breastfeeding. While a study conducted in Australia reported that the mother's ability to solve their own problems in breastfeeding by many ways, had a significant effect on breastfeeding

practices. Mother's potentials can maximized for determining their own way of overcoming the problem is a good thing to follow [22].

From the results of statistical analysis it is known that due to obstacles of breastfeeding it was found growth disorders in children ($p<0.002$). So increasement in the child's height is influenced by breastfeeding [23]. Results of a study in South Africa suggested that shortness in children was because of not performing recommendation of proper feeding for children, which are exclusive breastfeeding, breastfeeding up to 2 years old and the provision of complementary foods for children started at age 6 months [10,14]. The findings in this study served as an input for the nutrition program managers to give serious concern to the techniques of handling problems with breastfeeding. This can be done by placing a lactation counselor at all basic health services. Performing more training for breastfeeding motivators at each neighborhood health center is a good strategy. Maximizing vitamin A supplementation and the need for addition of zinc capsules for nursing mothers are also recommended. These options are good since it has great leverage and its achievements are easy to measure.

Community empowerment in an effort to increase breastfeeding provides many benefits to reduce the incidence of stunting in children aged 0 to 6 months. From this study, it is recommended to provide assistance to mothers with obstacles of breastfeeding. The focus is on those infants aged 0 to 6 months.

Conclusion

Obstacles of breastfeeding contributed to the high percentage of stunted children in the study area. The main obstacles are low early breastfeeding, low exclusive breastfeeding, low intake of vitamin A and low intake of zinc.

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References

1. Kementerian Kesehatan (2014) Peraturan Presiden RI Nomor 42 Tahun 2013 tentang Gerakan Nasional Percepatan Perbaikan Gizi. Jakarta, Republik Indonesia.
2. Kementerian Kesehatan (2013) Laporan Hasil Riset Kesehatan Dasar Tahun 2013. Badan Penelitian dan Pengembangan Kesehatan. Jakarta, Republik Indonesia.
3. Ida, Sirajuddin, Fanny L (2013) Pengaruh Konseling Terhadap Ketepatan Posisi Dan Pelekatan Bayi PadaPemberian Air Susu Ibu Di Klinik Sophiara Makassar. Media Gizi Pangan Journal, Media GiziPangan, Vol. XV, Edisi 1.
4. Manjilala, Judhiastuty F, Basuki DN (2014) Assessment of Breastfeed in Problems Experienced by mothers in the first six month postpartum: Process of tool development. Mal J Nutr 20: 351-365.
5. Rochimiwati SN, Mas'ud H, Giringan J (2013) Studi Pemberian MP–ASI Dini Dan Status Gizi BayiUmur 0 –6 Bulan Di Kelurahan Botang Kecamatan Makale Kabupaten Tana Toraja. Media GiziPangan, Vol. Xv, Edisi 1.
6. Compbel AA, Ashley AC, Saskia de Pee, Kai Sun, Klaus Kraemer, et al. (2010) Household Rice Expenditure and Maternal and Child Nutritional Status in Bangladesh J Nutr 140: 189S–194S.
7. Hendrayati, Aswita A, Darmawati (2013) Faktor Yang Mempengaruhi Kejadian Wasting Pada AnakBalita Di Kecamatan Marioriwawo Kabupaten Soppeng. Media Gizi Pangan, Vol. Xv, Edisi 1
8. Threesye S, Alfriani A (2013) Faktor-Faktor Yang Berhubungan Dengan Status Gizi Pada Anak Balita DiWilayah Kerja Posyandu Teratai Desa Tumale Kecamatan Ponrang Kabupaten Luwu. Media GiziPangan, Vol. Xv, Edisi 1.
9. Assis AMO, Prado MS, Barreto ML, Reis MG, Pinheiro SMC (2004) Childhood stunting in Northeast Brazil: the role of Schist soma mansoni infection and inadequate dietary intake. Eur J Clin Nutr 58: 1022–1029.
10. Masresha T, Tefera B, Getahun E (2013) Feeding patterns and stunting during early childhood in rural communities of Sidama, South Ethiopia. Pan Afr Med J 14: 75.
11. Quddus MA, Baur S (2013) Nutritional Status of Children Associated with Socio-Demographic Variablesand Food Security in Rural Bangladesh. Mal J Nutr 19: 193-2004.
12. Beka T, Wambui K, Zewditu G, Girum T (2009) Magnitude and determinants of Stunting in children under five years of age in food surplus region of Ethiopia. Ethiop J Health Dev 23: 98-106.
13. Gupta N, Mario G, Nicolas S (2007) Early introduction of water and complementary feeding and nutritional status of children in northern Senegal. Public Health Nutr 10: 1299-1304.
14. Prosper S, Martin PY, Savy M, Kameli Y, Traissac P (2006) An infant and child feeding index is associated with the nutritional status of 6- to 23 month-old children in rural Burkina Faso. J Nutr 136: 656-663.
15. Urwhatueat, WE (2011) Dietary diversity plays an important role in child under nutrition and food securityin Bangladesh. Food Nutr Bull 10.
16. Manjilala (2013) Masalah Gizi Balita Di Kecamatan Jonggat Kabupaten Lombok Tengah Propinsi NusaTengara Barat. Media Gizi Pangan, Vol. Xv, Edisi 1.
17. Marie DL, Misskey E (2015) Be positive as well as realistic: A qualitative description analysis of information gaps experienced by breastfeeding mothers. Int Breastfeed J 10.
18. Katepa B ,Victor M, Chipepo K, Freddie M, Olusegun B, et al. Infants and young children feeding practices and nutritional status in two districts of Zambia. Int Breastfeed J.
19. Vishnu K, Mandira A, Kay S, Yun Z (2013) Factors associated with the introduction of pre lacteal feeds in Nepal: findings from the Nepal Demographic and Health Survey 2011. Int Breastfeed J 8: 9.
20. Agunbiade, Ogunleye (2012) Constraints to exclusive breastfeeding practice among breastfeedingmothers in Southwest Nigeria: Implications for scaling up. Int Breastfeed J 7: 5.
21. Daifellah AM, Al Juaid, Colin WB, Roslyn CG (2014) Breastfeeding in Saudi Arabia: a review. Int Breastfeed J 9: 1.
22. Keemer (2013) Breastfeeding self-efficacy of women using second-line strategies for healthy term infantsin the first week postpartum: An Australian observational study. Int Breastfeed J 8: 18.
23. Judith AR, Becker S (1996) Risk factors for wasting and stunting among children in Metro Cebu, Philippines. Am J Clin Nuir 63: 966.

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