

Early initiation of breastfeeding is protective against child stunting in South Sulawesi: A Cross-Sectional Study

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Abstract

Background

South Sulawesi in 2018 was declared as the region with the fifth-highest position of stunting children. increasing the risk of excess nutrition and non-communicable diseases.

Objectives

To investigate The early breastfeeding initiation practices dan stunting children in South Sulawesi Province, Indonesia.

Methods

The surveys were designed by a cross-sectional study. The sample size proportional to children 0–50 months. The household was eligible for inclusion in the survey if they contained a child aged 0–23 month and if the primary caregiver was present for interviews. Sampling technique determined by cluster sampling for each district.

Results

The distribution of EBI practices in all districts/cities in South Sulawesi is between 14.93% to 90.97 %. EBI status is the majority of EBI 55.2%, duration with the highest percentage of ½ to 1 hour 48.2%. The Suckling process is good at 18.2% while others don't know. Timing is generally < 15 minutes 36.9%. Nutritional status data were known to severely stunting 6.1% and moderately stunting 15.6%.

Conclusion

EBI practices are more in urban than rural. Early initiation of breastfeeding is protective against child stunting in South Sulawesi

Introduction

Stunting is a public nutrition problem that has a high prevalence. The global stunting prevalence from 57% (Burundi) to less than 2% (Chile). Increased stunting will increase the risk of death, and detrimental effects on the development of knowledge and motor movements (rough and smooth), increasing the risk of excess nutrition and non-communicable diseases. The prevalence of stunting in Indonesia (30,8%), South Sulawesi (35,7%) in 2018^{1,2} It was found that the increased prevalence of stunting in South Sulawesi could never be dammed in all age groups. Portrait of South Sulawesi as a food storage area does not have a positive correlation with stunting, although food security and food security remain stable. South Sulawesi in 2018 was declared as the region with the fifth-highest position of stunting children. One important factor to prevent stunting is breastfeeding. Mother's milk is the highest quality food for children, especially 0–6 months, and provides most of the nutritional needs of children from the age of 6–24 months. Recommendations for breastfeeding from UNICEF and WHO are breastfeeding from birth to 24 months³. In connection with that, Indonesia is one of the countries that ratified the marketing recommendations for substituting breast milk in health facilities in 1993, and as proof, the government has committed to improving the quality of breastfeeding in Indonesia and South Sulawesi.

Objectives

This study aimed to investigate The early breastfeeding initiation practices dan stunting children in South Sulawesi Province, Indonesia

Materials And Methods

Study design, setting, and participants

The analysis used data from a baseline survey conducted in 24 districts in South Sulawesi Indonesia by the Health Department of Indonesia. The surveys were designed by a cross-sectional study. The sample size proportional to children 0–50 months. The household was eligible for inclusion in the survey if they contained a child aged 0–23 month and if the primary caregiver was present for interviews.

Sampling design

Sampling technique determined by cluster sampling for each district. Stage 1: Cluster determination (a) each district has 30 rural/urban selected as clusters (b) For a district that has less than 30 rural/urban taken all rural/urban (c) The selection of clusters in the district was done by randomly systematic based on proportional to size probability. Stage 2: Systematic randomization based on probability, as follows ; (a) make a list of rural/urban including the population (b) determine the interval by dividing the population with cluster number (3) determine the first cluster using the random table (4) Second cluster and so until the 30th cluster were selected based on the calculation of the cumulative number of residents and interval. If the selection of clusters (rural/urban) does not yet reach 30 in the list of the last rural/urban, resumed from the uppermost rural/urban in a way as follows (selected cluster number plus interval) minus total population. Selected of households in the cluster by determining the center of the cluster (crowd center) in a random. From the center point of the selected cluster then it runs circularly like a patten mosquito repellent to find a household that has children up to 10 households. The number of clusters in each regency is determined by 30 clusters. For each cluster, 10 households that have children aged 0–59 months with respondents being mothers. Based on the above technique sample size was determined 395212 children have aged 0–23 months. Child weight was measured using SECA electronic scales to a precision of 0,01 kg and child length measured using a locally made length board to a precision 0,1 cm. The SECA weighing scale was calibrated every morning, prior to data collection, using a 5 kg standard weight. Duplicate measurement of anthropometry was performed for 10 of samples, the within-subject coefficient of variation from the duplicate measurements in both children was less than 5%. All the enumerators received at least 5 days of training prior to data collection and those responsible for taking anthropometric measurements. The supervisor was assigned to oversee the works of the enumerators. All enumerator was selected by calumnies the department Nutrition Health Politehnica of Makassar who have height competency for community nutrition surveys. The number of enumerators was recruited, 72 people.

Results

The survey includes a representative sample of 395213 children aged 0-23 months. The missing data height of 1021 children whose mother did not complete interviews and anthropometric so finally sample of 394128 children aged 0-23 month whos mother was available for interviews.

Early Breastfeeding Initiation (EBI) based on area

This phase is a critical phase in the life cycle of nutrition. The stunting status in table 3 clearly differs between urban and rural areas. Some EBI characteristics are also different in each context as shown in Table 1.

Stunting based on EBI status

Early Breastfeeding Initiation (EBI) status, duration EBI, the timing of EBI, HAZ, WAZ, WHZ scores of the infant. EBI status is the majority of EBI 55.2%, duration with the highest percentage of ½ to 1 hour 48.2%. The Suckling process is good at 18.2% while others don't know. Timing is generally <15 minutes 36.9%. Nutritional status data were known to severely stunting 6.1% and moderately stunting 15.6% (Table 2)

Discussion

The viewpoint proposed in this paper is the variation of EBI practices in all districts in South Sulawesi. The interesting question is why there is such a wide disparity between distributions. This fact can be explained that the EBI practice is a new practice introduced in the region in early 2006. The socialization and advocacy by the health program implementers were carried out sporadically in accordance with the financial support that each region had. The distribution of funding for nutrition improvement programs is different in each region in South Sulawesi. This is because of the principles of programming and nutrition interventions as well as the priority scale of each local government differ⁴. Activities that are directly related to the community in breastfeeding socialization efforts are breastfeeding counselor training and coaching at the family level. So based on this evidence it can be seen that there are regions that have been very successful in improving EBI practices and some have not. The government in this region continues to strive to improve this condition.⁵

The quality of breastfeeding practice is measured based on many perspectives including on the practice of early breastfeeding, the duration of early breastfeeding initiation, the process of suctioning, and the timing and duration of sucking⁶. EBI is the best practice that is believed to be able to provide the basic ability for children to get to know and continue their passion for breastfeeding the next day. Children's favorite needs to be stimulated from the beginning of life because birth for children is a trauma condition⁶. There is a real difference between the mother's womb and the outside world. EBI practice provides peace to the child, so the mother is not only a matter of nutrition but also a matter of child psychology. The data in this study have provided an overview of the percentage of children who have an EBI experience. This percentage is still low. This can be caused by many factors and some of them are constraints on officers and constraints on culture. This EBI practice can be carried out if labor assistants have been equipped with sufficient competence to start the EBI process⁷. In Indonesia, this practice was only introduced in early 2006 through many breastfeeding counseling training. So the national policy is still relatively new. Implementation in the community requires trained personnel. Previously, this practice was not taught in health schools, so not all health workers were exposed to EBI.¹¹

Cultural constraints are sourced from the habit of the community to provide prelactal food, that fact in the wide world. The strictly adopted prelactal food is honey. This cultural concept gives legitimacy that children born immediately are given little honey on their lips. Indonesian observers of maternal and child health are still debating this issue. On the one hand, this type of prelactal is just a cultural symbol that is not included in the food that is really consumed by the baby, the impact is certainly not there. On the other hand, it is known that there is no giving anything to the baby before the age of 6 months. Of course, this makes the EBI concept in South Sulawesi not easy to develop more broadly in the early stages of socialization.¹⁰⁻¹⁴

EBI is carried out in accordance with the principles popularized by WHO that it takes a minimum of ½-1 hour to do this. This time is not without reason, because babies born have increased adrenaline and this means there is enough energy for suckling. At this point, it is most important to discuss the understanding of childbirth assistants and also

the mother's family. The principle of EBI is to suckling because this is a natural process and learning for babies. If this is successful, the practice of breastfeeding is not much of a problem in the future. Health workers, in particular, do not fully understand this context, so in some cases, the time given to babies for EBI is not enough. It takes refreshment to existing breastfeeding motivators.

The suckling process is the core of breastfeeding quality¹⁵. Appropriate suckling based on the principle of suckling by WHO can be done quite simply by every child, as long as they are given the opportunity early in breastfeeding. Suckling has the benefit of avoiding breast milk production problems. Proper suckling provides an opportunity for breast emptying, which will respond to the next breast milk production. This is a simple reason why it is important to ensure that suckling is done correctly. The mother's skill to position the child appropriately will make it easier for the baby to suckling. In this study not elaborated about the position and placement of infants, although this is also very important.

Stunting in this study continues to grow with age. The causes are many factors. One of the factors raised by other studies also in South Sulawesi is that there is a way to overcome them, namely maximizing breastfeeding practices¹⁶. The practice of breastfeeding in this area and also in some parts of Indonesia has decreased due to the incessant formula milk. For poor people especially it will be very difficult to access the price of formula milk that is not proportional to income. This is a sad thing. If only the popularity of formula milk is not good, then of course easily restore the practice of breastfeeding back to normal.

Conclusion

EBI practices are more in urban than rural. EBI practice is good at timing but still poor on suckling quality. Increased capacity of officers urgently repaired. EBI has begun to be carried out in South Sulawesi so that its support for stunting prevention has been proven, although its contribution has not been large. Continuous nutrition interventions are needed to continue the impact of better EBI on stunting prevention.

Declarations

Acknowledgment

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Authors Contribution

S = initial design of concepts and data management, design of the job discription team members, SS = checking instrument accuracy and quality of data input, acquisition, analusys, ART = reviewing the accuracy of the discussion substance, interpretation of th the data, AR = data management and interpretation, A = Reviewing all texts before submitting, RMT = Data analysis and interpretation, AI = cooperation with the health office as a data supplier

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Availability of data and material

The data in this study is part of the South Sulawesi Health Office document, Researcher's access rights with the permission of the data owner. Can only be accessed if you get permission from the South Sulawesi Health Office, for study purposes

Declaration

Ethics approval and consent to participate

The study was approved by the Institutional Review Board at Health Polytechnic of Makassar and Health Office South. Written informed consent was obtained for all participants

Consent for publication

Competing interest

The author declare no competing of interest

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Conflicts of interest

There are no conflicts of interest

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Tables

Table 1 Early Breastfeeding Initiation Characteristic in South Sulawesi Districts

Characteristic Breastfeeding	Area South Sulawesi						P Value
	Rural		Urban		Total		
	%	CI (95%)	%	CI (95%)	%	CI (95%)	
EBI (n=89565)							0,000
Yes	22.6	22.3 - 22.8	36.2	35.9-36.4	55.2	54.9-55.4	
No	17.3	17.0-17.5	27.5	27.2-27.7	44.8	44.5-45.0	
Duration of EBI (n=77059)							0,000
0-1/2 hours	17.3	17.0-17.5	27.6	27.3-27.8	44.9	44.6-45.1	
1-1 hours	19.5	19.2-19.7	28.7	28.4-28.9	48.2	47.9-48.4	
>= 1 hour	3.1	2.79-3,40	3.7	3.3-4.0	6.9	6.5-7.2	
Timing of EBI (n=85303)							0,000
<15 minute	21.6	19.9-24.1	15.4	15.1-15.6	36.9	36.6-37.1	
15-30 minute	8.2	8.0-8.3	5.1	4.7-5.0	13.3	13.0-13.5	
31-59 minute	1.7	1.38-2.0	1.4	1.0-1.7	3.1	2.7-3.4	
1-24 hours	0.8	0.49-1.10	0.6	0.2-0.9	1.4	0.1-1.7	
Height for age (n=22829)							0,000
Severely stunted	3.5	3.19-3.80	2.6	2.2-2.9	6.1	5.7-6.4	
Moderate stunted	9.9	9.5-10.2	5.8	5.4-6	15.6	15.3-15.8	
Normal	46.7	46.4-46.9	31.6	31.3-31.8	78.2	78.0-78.3	

Table 2. Nutritional Status (Height for Age) by Duration EBI (sub sample)

Early Breastfeeding Initiation (n=381465)		Stunted		Normal		Overall		p Value
		n(%)	CI(95%)	n(%)	CI(95%)	n(%)	CI(95%)	
Duration (minute)	0-59	(10.1)	9,7-10.4	(38.7)	38.4-38.9	(48.8)	48.5-49.0	0.000
	60-90	(1.3)	0.9-1.6	(5.7)	5.3-6.0	(7.0)	6.6-7.3	
Timing (minute)	< 15	(7.2)	6.8-7.5	(30.10)	29.8-30.3	(37.3)	36.8-37.3	0.000
	15-29	(2.9)	2.5-3.2	(10.6)	10.2-10.9	(13.4)	13.1-13.6	
	30-59	(0.90)	0.5-1.2	(2.2)	1,8-2.5	(3.2)	2.8-3.5	
	60-120	(0.20)	0.1-0.5	(1.2)	0.8-1.5	(1.4)	1.0-1.7	
	>120	(0.1)	0.1-0.3	(0.2)	0.1-0.5	(0.3)	2.0-3.9	
Suckling Process	Yes	(8.2)	7.8-8.5	(30.8)	30.5-31.0	(39.0)	38.7-39.2	0.000
	No	(3.0)	2.6-3.3	(13.3)	13.2-13.7	(16.3)	16.0-16.5	
Timing of Suckling	Not EBI	(8.1)	7.7-8.4	(30.6)	30.3-30.8	(38.8)	38.5-39.0	0.000
	0-59	(4.4)	4.0-4.7	(14.1)	13.7-14.2	(18.5)	18.2-18.7	
	60-90	(4.9)	4.5-5.2	(17.3)	17.0-17.5	(22.2)	21.8-22.5	
	91-120	(4.1)	3.7-4.4	(16.4)	16.1-16.9	(20.6)	20.3-20.8	