INTERNASIONAL CONFERENCE ON
MULTIDISCIPLINARY APPROACHES IN HEALTH SCIENCE
VOLUME 2 , ISSN 3032-4408 (Online)
https://ejournal.poltekkes-denpasar.ac.id/index.php/icmahs

The Relationship Of Exclusive Breastfeeding And Birth Weight History With Stunting Incidents

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Article history
Posted : 2024-12-12
Reviewed : 2024-10-29
Received : 2023-10-03

ABSTRACT

Stunting is still a problem in Indonesia. The stunting rate in Indonesia is still above the WHO tolerance rate of 29.6%. The incidence of stunting has an impact on decreasing cognitive abilities and academic achievement, decreasing immunity so that people get sick easily and are more at risk of developing chronic diseases, as well as uncompetitive quality of work which results in low economic productivity. The purpose of this study was to determine the relationship between exclusive breastfeeding and birth weight with the incidence of stunting.The type of research used is quantitative and the research design uses case control with a total sample of 74 consisting of 37 case samples and 37 control samples. Sampling used secondary data supported by interview questionnaires as cross-check data. Data analysis used the chi square test and the odds ratio to determine the relationship and the magnitude of the risk posed. The results showed that there was a relationship between history of exclusive breastfeeding and stunting with a p value of 0.000 (<0.05) and OR = 9.387, there was a relationship between birth weight and stunting with a p value of 0.009 (<0.05) and OR = 3,660. The results of this study are hoped that health workers can work together with posyandu cadres to improve the nutritional fulfillment of pregnant women and toddlers so that they avoid the risk of disturbances, one of which is stunting.

Keywords: Stunting, Exclusive Breastfeeding, Birth Weight.

Introduction

Malnutrition in children is the cause of more than a third of child deaths. In Indonesia, malnutrition problem brings two of fifty babies born every year do not survive beyond five years, who are generally victims of diseases and conditions that getting worse by nutritional problems. Malnutrition in the early age increases infant and child mortality rates, besides it causing sufferers to get sick easily and do not have maximal body posture as adults [1].

Growth and development disorder of children due to malnutrition and infection is characterized by the toddler's height according to age (TB/U) about -3 SD to <-2 SD or <-3 SD [2]. Based on the results of the Indonesian Nutrition Status Study (SSGI) of the Health Ministry, the prevalence of stunting in toddlers was 26.9% in 2020, which means that more than a quarter of Indonesian toddlers experienced stunting this year. However, thus figure decreased in 2021 as many as 2.5% compared to 2020 became 24.4%. [2].

In 2019, according to SSGI, the stunting rate in Central Java was still relatively high, as much as 27.68% [2]. Meanwhile, stunting cases increased in 2020 compared to the previous year, as much as 0.02% to 27.7% [2]. In 2021, stunting in Central Java was still above to the prevalence limit of stunting in Indonesia which reached 20.9% [2].

The prevalence of stunting in Central Java in 2021 is still above the national prevalence according to WHO. From the 34 districts/cities in Central Java, there are 14 districts/cities with the proportion of stunting toddlers above the provincial figure. In 21 other districts/cities the prevalence was below the provincial number. Pekalongan Regency is listed as an area with a high prevalence of stunting toddlers in Central Java. In 2019, the prevalence of stunting cases in Pekalongan Regency was still above the tolerance rate for stunting cases in Indonesia, as many as 22.08%. Then, in 2020, stunting cases in Pekalongan Regency increased 28.36% from the previous year that reached 3896 cases [3].

This case is divided into several sub-districts, with one of them being the focus of reducing stunting rates in Pekalongan Regency, namely Karangdadap Sub-district. One of the sub-districts with the most stunting cases is Karangdadap which reached 218 cases [4].

The risk factor for stunting in children ages 2 to 5 years is low birth weight (LBW). Most of LBW will inhibit growth in children, so that the risk of stunting (Budiastutik & Alamsyah, n.d.). LBW that occurs in babies can inhibit growth. This condition is influenced by less of nutrition when the baby is still in the womb [5].

Stunting, which is caused by growth faltering and catch-up growth that insufficient, shows there is an inability to achieve the optimal growth. This can be avoided if given adequate and sufficient nutritional so that growth will occure optimally [6]. Besides that, the birth of a baby with a normal weight but with insufficient nutrition is also risk to experience stunting. A history of infectious diseases, mother's knowledge, family income, and the distance between births are also risk factors for stunting [7].

Other research also prove that babies who do not receive exclusive breastfeeding for 6 months are also at high risk of experience stunting (Sumardilah & Rahmadi, 2019). One of the cause that ot given exclusive breastfeeding is insufficient breastfeeding production. Previous study showed that around 65.3% of mothers experienced problems to producing breastfeeding [8]. The incidence of stunting can be influenced by non-exclusive breastfeeding. Babies who are weaned less than 6 months are having risk of

experience stunting because the nutritional intake that the baby receives is not in accordance with what the baby needs at that age [9]. Babies who are given breastfeeding at the ages of 0-6 months will have a greater chance to avoid stunting [10]. The aim of this research is to find out the relationship and risk of a history of exclusive breastfeeding and birth weight with the incidence of stunting.

Research Method

This type of research used a case control design, which there were groups given cases and controls so that results can be obtained to compare the conditions of the case group and control group. The population was children ages 2-5 years in the working area of the Karangadadap Health Center, Pekalongan Regency. The sampling used the Stratified Random Sampling technique with a sample size calculated used the Lameshow formula obtained as many as 74 toddlers.

This research was conduct by 2 times in collecting data. The first data collection was conduct at the community health center in the form of secondary data from the community health center. The second data collection was conduct by interviewing village cadres and midwives, as well as the respondent's mother as a step to cross check data that was felt to be incomplete. The data obtained then analyzed used the chi square test and odds ratio. This research was declared ethically appropriate after receiving number 0802/EA/KEPK/2022 from the Semarang Ministry of Health Polytechnic research ethics commission.

Results and Discussions

1. Characteristics of Respondent Mothers

Table 1 Frequency Distribution of Subjects Based on Mother's Characteristics in Karangdadap Health Center working area

Parents characteristics	Stunting Incidents				Amount	
	Yes		No			
	N	%	n	%	N	%
Mother's age						
<20 and >35 years	7	9,5	7	9,5	14	19,0
20-35 years	30	40,5	30	40,5	60	81,0
Mother's height						
<150	20	27,0	14	18,9	34	45,9
>150	17	23,0	23	32,2	40	54,1
Mother's education						
Elementary School	12	16,2	8	10,8	20	27,0
Junior High School	12	16,2	11	14,9	23	31,1
Senior High School	11	14,9	17	23,0	28	37,8
College	2	2,7	1	1,4	3	4,1
Mother's job						
Housewife	21	28,4	18	24,3	39	52,7
Labor	12	16,2	11	14,9	23	31,1
Self-employed	1	1,4	1	1,4	2	2,7
Employee	3	4,1	7	9,5	10	13,5

The results of the age distribution of respondents were on aged 20-35 years old. The age influences a person's catching power and mindset. The more a person gets older, it will more increase a process of developing thinking power so that they will be more mature in thinking and working [6]. The analysis results of the characteristics of toddlers mothers in the Karangdadap Health Center work area show that the majority of stunted toddlers have mothers with a height of less than 150 cm, as many as 27.0%. In the educational characteristics, it was found that children who experienced stunting mostly had mothers with elementary and middle school education, as many as 16.2% respectively. In the case and control groups, most of the parents worked as housewives, as many as 28.4% and 24,3%

2. Frequency Distribution Based on Exclusive Breastfeeding, Birth weight, and Stunting Incidence.

Table 2 Frequency Distribution Based on Exclusive Breastfeeding, Birth Weight, and Stunting Incidence in the Karangdadap Health Center working area

Variable	Case		Control	
	n	%	n	%
Exclusive Breastfeeding History				
Non-Exclusive Breastfeeding	22	59,45	5	13,51
Exclusive Breastfeeding	15	40,55	32	86,49
Total	37	100	37	100
Birth Weight				
LBW	20	54,05	9	24,32
Normal	17	45,95	28	75,68
Total	37	100	37	100
Stunting Incidence				
Stunted	37	100	0	0
Not stunted	0	0	37	100
Total	37	100	37	100

Analysis of data from 74 respondents showed that 59.45% of children were not exclusively breastfed. Then children with a history of LBW were 54.05%

3. The Relationship between Exclusive Breastfeeding with Stunting Incidence

Table 3 The relationship between Exclusive Breastfeeding with Stunting Incidence in toddlers aged 2-5 years in the Karangdadap Health Center working area

Independent	**Stunting**	**Total**	***p-***	***OR***

Variable							***value***	
	Yes		**No**					
	N	**%**	**N**	**%**	**n**	**%**		
Non Exclusive Breastfeeding	22	81,5	5	18,5	27	100	0,000*	9,387
Ekslusifi Breastfeeding	15	31,9	32	68,1	47	100		

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Independent Variable	**Stunting**				**Total**		***p-value***	***OR***
	Yes		**No**					
	N	**%**	**N**	**%**	**n**	**%**		
Non Exclusive Breastfeeding	22	81,5	5	18,5	27	100	0,000*	9,387
Ekslusifi Breastfeeding	15	31,9	32	68,1	47	100		

Based on the results of data analysis from 74 respondents, children were not given Exclusive Breastfeeding and experienced stunting as many as 81,5 %. The history of children with Non-exclusive Breastfeeding shows a statistically significant p-value of 0.000 (p-value < 0.05) so that there is a significant relationship between non-exclusively breastfed children with stunting incidence. The results of statistical calculations show that the OR value = 9.387, this means that a history of non-exclusive breastfed children has a 9.387 times greater risk of experience stunting than toddlers who born normal or not LBW (CI=95%).

From this research, it obtained results from 74 respondents who were not given Exclusive Breastfeeding as many as 27 respondents (63.5%). From that results, it can be concluded that the achievement of Exclusive Breastfeeding at the Karangdadap Health Center Work Area is still below the national target number as many as 80% [11]. Exclusive breastfeeding is breastfeeding within 6 months without giving other food or drinks such as banana, porridge, biscuit or formula milk, tea, water and honey. Exclusive breastfeeding is assessed by the mother's consistency in giving only breastfeeding for 6 months and to other complementary foods or

drinks can be given after the baby is more than 6 months old, while breastfeeding can be given for 2 years or more [12]. In this research also showed that 27 respondents (36.5%) were not given exclusive breastfeeding. Exclusive breastfeeding can be influenced by several factors, one of them is the mother's knowledge which can be caused by the mother's low educational background. The results of this research are in accordance with previous research regarding exclusive breastfeeding which revealed that there was a significant relationship between the mother's level of knowledge about exclusive breastfeeding which examined the relationship between maternal education with the stunting incidence. Mother's knowledge plays a very important role in this matter. Because mothers contribute the most to the formation related children's eating habits, because mothers are the ones who prepare food, start arranging menus, shopping, cooking, preparing food and distributing food. The results of this research are in accordance with the results of previous research with p=0.000, which means there is a significant relationship between exclusive breastfeeding with stunting incidence as many as 66 respondents or 91.7% [13].

Breast milk is food that includes all the nutrients a baby needs, both physical, psychological, social and spiritual. Breast milk contains nutrients, hormones, immune growth, anti-allergic and anti-inflammatory elements [14]. One of the benefits of breast milk is to support height growth so that stunting can be avoided. This is because breast milk contains lactose, which can increase calcium absorption in the body. Exclusive breastfeeding is considered to be very helpful in reducing stunting because the calcium that is most efficiently absorbed in toddlers' bodies is the calcium contained in breast milk rather than the calcium in formula milk [15]. The results of this research are also in accordance with previous research regarding the relationship between exclusive breastfeeding and the stunting incidence in toddlers aged 24-60 months with the results of bivariate analysis showing that children who were not given exclusive breastfeeding suffered more from stunting, as many as 71.7% (OR 2.29 95 % 1,434-6,835) [14]. These results are also supported by research which states that exclusive breastfeeding is one of the factors associated with stunting p=0.021 for 23 respondents or 41.8% of children with stunting who do not receive exclusive breastfeeding [12]. This is in accordance with the theory that exclusive breastfeeding is one of the factors that influences stunting incidence and there are other factors such as nutritional intake, infectious diseases, food availability, nutritional status of pregnant women, birth weight, birth length and MP-ASI [5].

Low levels of exclusive breastfeeding can be one of trigger for stunting in children. This is because breast milk is the perfect nutritional intake for newborns up to six months of age. The nutritional content of breast milk already sufficient and appropriate to the baby's condition. Therefore, the given of exclusive breastfeeding is considered a way to fulfill perfect nutrition. Because children aged less than six months still have digestion that is not able to digest food other than breast milk or foods such as MP-ASI. Besides that, babies with a history of non-exclusive breastfeeding or who have been given food other than breast milk will have deficient or even inappropriate nutritional content which can result in their growth and development being disrupted or hampered. Otherwise, if children receive exclusive breastfeeding, there is a high probability that they will avoid the risk of stunting. The given of Exclusive breastfeeding means that the mother will help maintain the child's nutritional balance so that normal and optimal child growth is achieved.

Breast milk is very much needed during the baby's growth period so that his nutritional needs are sufficient. The results of a literature review state that exclusive breastfeeding is one way to prevent stunting [16] therefore, mothers are obliged to give exclusive breastfeeding to babies from birth to 6 months of age and continue to give breast milk until the baby is 2 years old to fulfill the baby's nutritional needs. and giving MP-ASI when the baby is more than 6 months old.

Table 4 Relationship between Birth Weight with stunting incidence in toddlers aged 2-5 years in the Karangdadap Health Center working area

Independent Variable	Stunting				Total		*p-value*	OR
	Yes		No					
	n	%	n	%	n	%		
BBLR (LBW)	20	69,0	9	31,0	29	100	0,009*	3,660

The results of this research was 69.0% of children with stunting have a history of low birth weight or LBW. The results of the research show that there was a relationship between a history of low birth weight (LBW) babies and the incidence of stunting in children ages 2-5 years with a significant p-value 0.009 and an OR of 3.660 times more risk of experienced stunting. LBW is a baby born with a body weight of less than 2500 grams. LBW is a new term that derived from the term of premature [9]. LBW since in the womb have a growth retardation of intrauterine and it will continue until the next age after birth, that is experience slower growth and development than babies born normally, and often fail to catch up with the growth rate that they should achieved at their age after birth. LBW also experience digestive tract disorders, because the digestive tract is not yet functioning, such as unable to absorb fat and digest protein, therefore resulting in a lack of nutritional reserves in the baby's body. LBW can be caused by a lack of maternal nutritional intake during pregnancy so that the fetus's development does not match to its age. The results of this research are in line with previous research that low birth weight is one of the risk factors for stunting in children with a p-value of 0.000 < 0.05 (OR = 1.665; 95% CI: 2.08-9.10) which means there is a relationship between LBW and stunting [5].

This condition can occur because babies born with LBW since in the womb have experience growth disorder and this will continue to the next period after birth. This situation will result in baby to experience problems of intake, so it can disrupting the growth and development of babies born normally. LBW also experience digestive tract disorders, because the digestive tract is not yet functioning, such as unable to absorb fat and digest protein, it resulting in a lack of nutritional reserves in the baby's body. As a result, LBW growth will be disrupted, if this situation continues with insufficient food, often get infections or illness and bad health care, therefore it can cause children to experience stunting.

Conclusion

The given of Exclusive breastfeeding and birth weight are associated with the incidence of stunting. Fulfillment of nutrition when a mother is pregnant and during the first 1000 days of life is a golden time to provide the right intake so that the baby is protected from stunting.

Acknowledgement

Thank you author deliver to director of the Health Polytechnic, Ministry of Health, Semarang and Public Health Center of Karangdadap, Pekalongan Refency that have been allowed the author to conduct this research.

Conflic of Interest

This research was not contained any conflict of interest from anywhere.

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