



Continuity of Midwifery Care Implementation to Reduce Stunting

Nurfatimah Nurfatimah^{1*}, Kadar Ramadhan¹, Christina Entoh¹, Lisda Widiyanti Longgupa¹, Fahmi Hafid²

Department of Midwifery, Poltekkes Kemenkes Palu, Palu, Indonesia; ²Department of Nutrition, Poltekkes Kemenkes Palu, Palu, Indonesia

Abstract

BACKGROUND: Reducing and preventing stunting is currently a priority for health programs in Indonesia. As providers of midwifery care, midwives have a strategic position to play a role in accelerating stunting reduction. The provision of continuity of midwifery care is expected to be able to prevent stunting in infants.

AIM: This study aims to determine the effectiveness of providing continuity of midwifery care for the incidence of stunting.

METHODS: The study design was a cohort from the third trimester of gestation until the baby reached 6 months of age, with the population were all third-trimester pregnant women in the working area of Mapane Health Center. The number of samples was 32 as case and 32 as control. The research variables were the characteristics of the respondents, early initiation of breastfeeding, chronic energy deficiency, hypertension, place of birth, and the incidence of stunting. The hypothesis test was used as Chi-square. Data analysis used the WHO Anthro and STATA applications.

RESULTS: The proportion of children who were stunted at the age of 6 months was 15.6%, where the proportion of children who experienced stunting at 6 months of age in the control group was 28.1%, while in the intervention group it was only 3.1%. Providing effective midwifery care to prevent stunting in children showed that maternal age ($p = 0.017$) and exclusive breastfeeding ($p = 0.009$) were associated with the incidence of stunting.

CONCLUSION: Exclusive breastfeeding can prevent the occurrence of stunting in children.

Edited by: Sasho Stoleski
Citation: Nurfatimah N, Ramadhan K, Entoh C, Longgupa LW, Hafid F. Continuity of Midwifery Care Implementation to Reduce Stunting. Open Access Maced J Med Sci. 2021 Dec 01; 9(E):1512-1516. https://doi.org/10.3889/oamjms.2021.7062
Keywords: Stunting; Midwife care; Exclusive breastfeeding
***Correspondence:** Nurfatimah Nurfatimah, Department of Midwifery, Poltekkes Kemenkes Palu, Palu, Indonesia. E-mail: nfatimahhh@gmail.com
Received: 13-Aug-2021
Revised: 16-Oct-2021
Accepted: 21-Nov-2021
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Funding: This research did not receive any financial support
Competing Interests: The authors have declared that no competing interests exist
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Introduction

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, especially in the first 1000 days of life. Stunting affects brain growth and development. Stunting children also have a higher risk of suffering from chronic diseases in adulthood. Stunting and malnutrition are estimated to contribute to a 2–3% reduction in gross domestic product each year [1].

Stunting in childhood is one of the most significant barriers to human development [2]. Globally, around 150.8 million or around 22.2% of children under the age of five are stunted. In addition, 50.5 million (7.5%) under-fives also experienced wasting, and 38.3 million (5.6%) were underweight [3], [4]. The Basic Health Research (2018) results show that 30.8% of infants under 5 years of age (toddlers) suffer from stunting. This means that as many as 7 million children under five in Indonesia today, who are the nation's generation, are threatened with a lack of competitiveness in their future lives. The decline in the stunting rate in Indonesia over the past 10 years has not shown any significant changes [5].

The prevalence of stunting in the Central Sulawesi is still high. According to the nutrition status

monitoring data, in 2015, it was 35.3% down to 32% in 2016 but again rose to 36.1% in 2017. This figure is still far above the WHO target, below 20% [6], [7]. In Poso District, the prevalence of stunting in 2013 was 39.4% and decreased to 26.2% in 2018. This considerable decline places Poso as the third lowest stunting district after Palu City and Kab. Tojo Una-Una [8], [9].

Stunting can be prevented, starting with the role of parents. Prevention measures start from the first 1000 days of life, 8 months in the womb and 2 years after birth. Through public health services in all regions, the Ministry of Health (Kemkes) encourages the fulfillment of exclusive breastfeeding or babies only consume breast milk for 6 months and continued breastfeeding with complementary foods for 2 years for toddlers [10], [11].

Several causes, as described above, have contributed to the high prevalence of stunting in Indonesia, and therefore, a comprehensive intervention plan is needed to reduce the prevalence of stunting in Indonesia [11]. Efforts to improve the continuity and quality of mothers and children are carried out with an approach through comprehensive midwifery care. Comprehensive midwifery care means services provided in the life cycle starting from pregnancy, childbirth, postpartum, infant, and family planning. If the

intervention approach of comprehensive midwifery care is implemented, it will have a significant impact on the survival and quality of life of mothers and children [12].

The prevalence of stunting in the Mapane Health Center area is still high, above 30%, and this is a public health problem. One way to overcome these problems is to increase the participation of midwives, through the provision of comprehensive midwifery care. Comprehensive midwifery care can optimize the detection of high-risk maternal and neonatal. This effort can involve various sectors to carry out assistance to pregnant women as a promotive and preventive effort starting from when the pregnant woman is found until the woman in the postpartum period ends through counseling, information, and education [13], [14]. Comprehensive midwifery care is an examination carried out in full, starting from midwifery care for pregnancy, midwifery care for childbirth, midwifery care during the puerperium, and midwifery care for newborns and family planning care (Kemenkes RI, 2016). Comprehensive midwifery care can be one of the specific intervention efforts aimed at children in the first 1000 days of life and contribute to a 30% reduction in stunting. This intervention is also short-term, where the results can be recorded in a relatively short time so that the implementation of comprehensive midwifery care is expected to prevent stunting in the working area of the Mapane Health Center.

Methods

This study was a longitudinal study with a cohort approach carried out in April–November 2020. The population in this study were all third-trimester pregnant women in the Mapane Health Center work area. The sample in this study was all pregnant women in the Mapane Health Center area (total sampling), which amounted to 32 people as the intervention group, while for the control group was 32 third trimester pregnant women in the Mapane Health Center work area. In the intervention group, midwifery care was carried out by visiting 4 times, namely, 2 times ANC, 1 time INC, and 1 time PNC. Then, monitor the growth of the baby when the child was 6 months old. Due to the COVID-19 pandemic, the implementation was also carried out online.

The instrument used for data collection is a healthy family questionnaire through the ODK collect android-based application, which can be accessed through <https://ee.kobotoolbox.org/x/x2WChViy>. The dependent variable in this study was the incidence of stunting. The independent variables were age, education, work parity, gender of the child, implementation of early initiation of breastfeeding, breastfeeding, chronic energy deficiency, the incidence of hypertension in pregnancy, and the type of delivery.

The analysis used was descriptive, namely, the proportion and mean difference. The analysis was performed using the WHO Anthro version 3.2.2 and STATA 15.1. The WHO Anthro was used to determine the z value of each nutritional indicator then the data were exported to STATA for further analysis. The hypothesis test was used as Chi-square.

This research has passed an ethical review and obtained ethical clearance from the Health Research Ethics Commission of the Polytechnic of the Ministry of Health Palu Number: LB.01.01/KE/0014.1/IV/2020.

Results

Table 1 shows no difference in the proportions of age, education, occupation, parity, child sex, early breastfeeding initiation, breastfeeding, hypertension in pregnancy, type of delivery, place of delivery, and the incidence of stunting at 0 months between the control and intervention groups. There was a difference in the proportion of stunting between the control and intervention groups at the age of 6 months.

Table 1: Characteristics of respondents

Variable	Groups				p-value
	Control		Intervention		
	n	%	n	%	
Age					
<20 years	5	15.6	4	12.5	0.328
20–35 years	23	71.9	27	84.4	
>35 years	4	12.5	1	3.1	
Education					
Junior High School	4	12.5	4	12.5	1.000
Senior High School	27	84.4	27	84.4	
University	1	3.1	1	3.1	
Job					
Working	3	9.4	3	9.4	1.000
Not working	29	90.6	29	90.6	
Parity					
Primipara	9	28.1	7	21.9	0.739
Multipara	22	68.8	23	71.9	
Grandeprima	1	3.1	2	6.3	
Child gender					
Male	14	43.8	18	56.3	0.453
Female	18	56.3	14	43.8	
Early initiation of breastfeeding					
No	11	34.4	12	37.5	1.000
Yes	21	65.6	20	62.5	
Breastfeeding					
No	18	56.3	11	34.4	0.131
Yes	14	43.8	21	65.6	
Chronic energy lack					
Yes	5	15.6	7	21.9	0.750
No	27	84.4	25	78.1	
Hypertension in pregnancy					
Yes	1	3.1	2	6.3	1.000
No	31	96.9	30	93.8	
Type of delivery					
SC	10	31.3	9	28.1	1.000
Normal	22	68.6	23	71.9	
Place of birth					
Hospital	13	40.6	12	37.5	1.000
Public health center	19	59.4	20	62.5	
Stunting at 0 months					
Yes	2	6.3	2	6.3	1.000
No	30	93.8	30	93.8	
Stunting at 6 months					
Yes	9	28.1	1	3.1	0.013
No	23	71.9	31	96.9	

*p-value

Table 2 shows that most mothers aged >35 years, junior high school education, working mothers, grande-multipara, and male gender, did not do early

breastfeeding initiation and exclusive breastfeeding. Furthermore, they experienced chronic energy deficiency and hypertension in pregnancy gave birth in the hospital, and experiencing stunting at the age of 0 months will experience stunting at the age of 6 months.

Table 2: Bivariate analysis of stunting

Variable	Stunting				p-value
	Yes		No		
	n (10)	% (15.6)	n (54)	% (84.4)	
Age					
<20 years	1	11.1	8	88.9	0.017
20–35 years	6	12.0	44	88.0	
>35 years	3	60.0	2	40.0	
Education					
Junior High School	2	25.0	6	75.0	0.628
Senior High School	8	14.8	46	85.2	
University	0	0.0	2	100.0	
Job					
Working	1	16.7	5	83.3	1.000
Not working	9	15.5	49	84.5	
Parity					
Primipara	2	12.5	14	87.5	0.660
Multipara	7	15.6	38	84.4	
Grandepara	1	33.3	2	66.7	
Child gender					
Male	6	18.8	26	81.3	0.731
Female	4	12.5	28	87.5	
Early initiation of breastfeeding					
No	5	21.7	18	78.3	0.474
Yes	5	12.2	36	87.8	
Breastfeeding					
No	9	31.0	20	69.0	0.004
Yes	1	2.9	34	97.1	
Chronic energy lack					
Yes	3	25.0	9	75.0	0.381
No	7	13.5	45	86.5	
Hypertension in pregnancy					
Yes	1	33.3	2	66.7	0.405
No	9	14.8	52	85.2	
Type of delivery					
SC	4	21.1	15	78.9	0.466
Normal	6	13.3	39	86.7	
Place of birth					
Hospital	6	24.0	19	76.0	0.170
Public health center	4	10.3	35	89.7	
Stunting at 0 months					
Yes	2	50.0	2	50.0	0.112
No	8	13.3	52	86.7	

*p-value

Discussion

In this study, the proportion of stunting at the age of 6 months was 15.6%; the control group was 28.1%, and the intervention group was 3.1%. There were two variables related to the incidence of stunting, maternal age, and exclusive breastfeeding.

One of the maternal characteristics related to stunting was age. In this study, the majority of children who experienced stunting were mothers >35 years old. This finding is different from the previous studies in Africa, which stated that the nutritional needs of pregnant women, including young mothers, were greater because both the baby and the mother would need nutritional intake. If the baby's nutritional intake is not sufficient, then the baby will take reserves from the mother, and the risk of moderate malnutrition is greater in children born to mothers who give birth to married and pregnant at a young age [15], [16].

In this study, the majority of children who were breastfed had normal nutritional status. Breast milk is

vital for child nutrition. Several previous studies have shown that breastfeeding is very useful in preventing stunting [17], [18], [19]. Breast milk is produced by the mother and contains the nutrients needed for the needs and development of the baby. Breast milk has high calcium content and has high bioavailability to be absorbed optimally, especially in bone formation.

Provision of intervention in counseling about the importance of breastfeeding is needed when the mother is pregnant. In this study, we provide counseling related to the importance of fulfilling nutritional needs, especially in the first 1000 days of life. Flipcharts as a communication medium for behavior change can increase the effectiveness of specific program efforts in the first 1000 days of life [20].

The nutritional content of breast milk is very dense and sufficient to meet all the nutritional needs of infants, especially in the first 6 months of life. Breast milk also contains fats and proteins that are important for the baby's growth and development of the nervous system. In addition, the antibodies in breast milk can also increase the baby's immune system so that he is not susceptible to disease [21]. Breastfeeding is the best choice because many scientific studies have shown that breastfed babies have a lower risk of stunting than those who are not breastfed [22], [23], [24].

One of the challenges in exclusive breastfeeding is the place where the mother gives birth. In many cases, mothers who gave birth in hospital through cesarean section were treated separately between mother and child, thus preventing early breastfeeding initiation. Failure to do early breastfeeding initiation is likely to cause failure to exclusively breastfeed [25], [26], [27], [28]. In this study, most children born by cesarean section and did not perform early breastfeeding initiation would experience stunting.

Midwifery care carried out by midwives is critical in preventing stunting. It is given to mothers during the reproductive period, where a midwife with full responsibility will provide comprehensive care to women starting from infancy, toddlerhood, adolescence, pregnancy, childbirth, and until menopause. One of the objectives of implementing midwifery care is to empower women by physically preparing, emotional maturity to prepare for pregnancy, maintaining health and nutrition during pregnancy, planning childbirth and breastfeeding, child care, providing balanced nutrition, and stimulating child development according to the age [29], [30].

The implementation of midwifery care is expected to contribute to creative and innovative health development, especially in realizing integrated health services. One of the expected medium-term outcomes through integrated stunting prevention interventions is a reduction in anemia in pregnant women and adolescent girls, a decrease in the incidence of low-birth-weight infants, and an increase in the number of

exclusive breastfeeding for infants. The achievement of this medium-term goal can be done through the provision of comprehensive midwifery care to women of reproductive age [31]. Therefore, midwifery care that is carried out correctly following the objectives is expected to be one of the efforts to prevent stunting, of course, by not neglecting other efforts and strategies.

Conclusion

Based on the results of the study, the proportion of children who experience stunting at the age of 6 months was 15.6%, the proportion of children who experience stunting at the age of 6 months in the control group was 28.1% while in the intervention group only 3.1%. Breastfeeding can prevent the occurrence of stunting in children. We suggest for Community Health Centres, especially village midwives, that the provision of information related to stunting, including other health problems related to maternal and child health, should be more massive. The empowerment of cadres as assistants to village midwives must be carried out to ease the work of midwives so that cadres can convey the delivery of information to pregnant women.

Acknowledgment

We thank the Head of Mapane Health Center, who has permitted us to conduct this research.

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