PROCEEDING SRIWIJAYA INTERNATIONAL CONFERENCE OF PUBLIC HEALTH 4th
"Health and Nutrition Innovation for Better Life Style in Digital Era"
September 21st, 2023 | The Zuri Hotel, Palembang

MOTHER'S CHARACTERISTICS AND HISTORY HEALTH OF TODDLER EXPERIENCED WITH STUNTINGIN THE REGIONWORK OF SENABING HEALTH CENTER, LAHAT DISTRICT

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ABSTRACT

Stunting is still a problem in some countries, especially developing countries. According to UNICEF,stunting can be caused by several factors such as nutrient intake, toddler health, maternal factors, food availability, maternal parenting, drinking water and sanitation, health services, as well as social and economic factors. Therefore, the purpose of this study was to determine the relationship between maternal characteristics (mother's age at pregnancy and parity of pregnancy) and health history of children under five (birth weight, history of exclusive breastfeeding, history of immunization, and history of complementary feeding) with the incidence of stunting in the work area. Senabing Health Center, Lahat Regency. This study used a cross-sectional research design (cross-sectional) with a quantitative approach. The sample of this research is mothers dan toddlers aged 24-59 months totaling 60 respondents with a simple random sampling technique. Data analysis techniques were univariate and bivariate, and presented in the form of tables and narratives to interpret the data. Based on the results of bivariate analysis, there was a relationship between history of birth weight and history of exclusive breastfeeding with the incidence of stunting in children under five in the working area of Pusekesmas Senabing 2022. There was no relationship between maternal age during pregnancy, parity, history of basic immunization, and history of complementary feeding with the incidence of stunting in children under five in the working area of Pusekesmas Senabing 2022.

Keywords:History Health of Toddler, Mother's Characteristics, Stunting

Introduction

Nutritional problems such as malnutrition can be a threat for human health and national development. Current double load or the double burden of nutritional problems that the world still faces, namely underweight and overweight. This problem is often encountered, especially in countries development of low and medium habitats.[1]One of the nutritional problems that is still a major problem in some countries developing countries including Indonesia, namely stunting. Stunting is a condition Failure to thrive in children can have a negative impact on some children aspect/sector.[2]

Stated that the impact of stunting is divided into two, namely short-term impact and short-term impact long term impact. The short-term impacts that can result from stunting are: increase morbidity and mortality (death), cognitive, motor and language development which is decreasing, as well as increasing costs in the treatment and care of children when they are sick. Meanwhile, in

the long term, stunting can cause children to have short stature short compared to age, increased risk of degenerative diseases such as obesity and other comorbidities, decreased reproductive health, decreased learning ability and achievement at school, as well as decreased productivity and performance at work.[1]Obstruction cognitive and motor development in children so that it can cause decreased IQ scores and low learning achievement in school. This matter This will indirectly affect the Human Development Index score (HDI). Apart from that, stunting can also cause an increased risk of death and degenerative diseases in adulthood such as obesity, diabetes mellitus, hypertension, heart disease, hypercholesterolemia, stroke, and other comorbidities.[2]

The impacts arising from stunting cause stunting is one of the malnutrition problems found in the SDGs program (Sustainable Development Goals), namely SDG 2.2 ends all forms malnutrition and is targeted to be achieved in 2025. The target is internationally agreed on stunting and wasting in children under age 5 years, and meet the nutritional needs of young women, pregnant and lactating women, as well as elderly people. The United Nations (UN) plans the achievement of the SDGs program related to the problem of malnutrition in infants and toddlers ended in 2030.[3]

Stunting and the First 1000 Days of Life (HPK) period have causality. The 1000 HPK period starts from the time of the mother's pregnancy for 270 days and continues until the child is 24 months old. In this period, physical growth and development of children cognitively and motorically takes place rapidly so that the health and nutritional intake of the mother during during pregnancy as well as in infants and toddlers must be fulfilled. The nutritional deficiencies occurring in the 1000 HPK period can have an impact on failure to thrive conditions on child.[4] Malnutrition of the mother during pre-pregnancy and pregnancy can cause children experience IUGR (Intra Uterine Growth Retardation), namely, slowing or Fetal growth retardation thereby increasing the risk of having a child who is LBW. The condition of IUGR in children is related to the condition of the mother, such as nutritional status mother, pre-pregnancy mother's weight, mother's age during pregnancy, and weight gain during an inappropriate pregnancy. IUGR and LBW that occur in children can causing stunting problems.[5]

Apart from lack of nutritional intake, there are many other causes influence the occurrence of stunting, both in the health and social sphere not health. The scope of health that influences the incidence of stunting is: birth weight, IMD, exclusive breastfeeding, infectious diseases, and immunization. Including coverage non-health sanitation, namely environmental cleanliness, drinking water, family smoking, use of birth control, etc. This is in accordance with the government program at 1000 HPK, namely specific and sensitive nutritional interventions. Nutrition intervention specifically as a domain of the health sector and is short term as well.[6]

The prevalence of stunting in the world in 2020 is 22% or around 149.2 million children who experience stunting. The country with the highest prevalence of stunting is Burundi found on the

African continent. The prevalence of stunting is still high in several countries, especially countries developing like countries on the African and Asian continents. Indonesia as one of the countries developing is in 2nd place with the highest prevalence of stunting on the Southeast Asian continent after the country of East Timor. Based on 2018 Riskesdas data, the prevalence of stunting in Indonesia is 30.8%. Based on riskesdas data for South Sumatra province in 2018, Lahat Regency has the prevalence of severe stunting is 28.20%. This figure is the highest figure compared to other districts/cities. Meanwhile, the prevalence of stunting is 19.92%. So prevalence stunting of children under five in Lahat Regency in 2018 was 48.12%.[7]

Data from the Lahat Regency health service shows that 18 villages are priority areas handling stunting (stunting locus villages) in 2021, namely the villages of Pagardin, Purwasari, Tanjung Beringin, Sukamakmur, Sirah Pulau, Sukaraja, Kota baru, Senabing, Tanjung Payang, Makartitama, Lubuk Atung, Muara Cawang, Ulak Mas, Kota jaya, Padang Lengkuas, Ngalam Baru, Batu Niding, Lawang Agung, Tanjung Agung, and Tanjung Bulan. Makartitama, Ulak Mas, and Purwasari Villages is a stunting locus village in Lahat Regency and is included in the working area of the Community Health Center Senabing with a stunting prevalence of 12.40% in the period January to June 2021.[8] When compared with the UNICEF and WHO cut-off points, 12.40% falls into the category moderate problem.

Based on the above background, research was conducted which aimed to determine the relationship between maternal characteristics（maternal age at pregnancy and parity)and the health history of toddlers（weight history birth weight, history of exclusive breastfeeding, history of basic immunization, & history of giving complementary foods)the incidence of stunting in the work area of the Senabing Health Center, Lahat Regency.

Methods

This research uses a cross sectional design with a cross-sectional approach quantitative to determine the relationship between the dependent variable and the independent variable only done once and at the same time. The dependent variable in this study is stunting, while the independent variables are the mother's age at pregnancy, pregnancy parity, history toddler's birth weight, history of exclusive breastfeeding, immunization history, and history of complementary feeding. This research is located in the working area of the Senabing Health Center, Lahat Regency with samples namely mothers and their toddlers aged 24-59 months totaling 60 samples. Research instruments used in data collection are microtoise (to measure height of toddlers) and questionnaires. Data processing was carried out using Microsoft Excel and statistical applications with univariate data analysis (frequency distribution) and bivariate analysis using the Chi-square statistical test with a confidence level (CI) of 95% (α=0.05). If the p-value obtained is smaller than 0.05 then there is a

significant relationship between the dependent variable and the independent variable, whereas if the p-value obtained is more than 0.05 means there is no significant relationship between variables.

This research has received approval and passed an ethical review from the Health Research Ethics Commission, Faculty of Public Health, Sriwijaya University on December 20 2021 with number 360/UN9.FKM/TU.KKE/2021.

Results

The results of univariate analysis of each research variable, namely stunting, age mother during pregnancy, parity of pregnancy, history of birth weight, history of exclusive breastfeeding, history of basic immunization, and complementary feeding history with a total of 60 respondents can be seen in table 1 frequency distribution of mother characteristics and toddler health history in the working area of the senabing health center .

Table1. Frequency distribution of mother characteristics and toddler health history in the working area of the Senabing health center

Variable	Frequency	
	n	%
Stunting status :		
Stunting	10	16.7
Notstunting	50	83.3
Maternal age at pregnancy:		
Risky	13	21.7
No risk	47	78.3
Parity :		
Risky	22	36.7
No risk	38	63.3
Birth Weight :		
Low birth weight	4	6.7
Normal birth weight	56	93.3
Exclusive breastfeeding status :		
Not exclusive breastfeeding	29	48.3
Exclusive breastfeeding	31	51.7
HistoryBasic Immunization :		
Incomplete	12	20
Complete	48	80
ComplementaryFeeding :		
Not Exactly	29	48.3
Exactly	31	51.7
amount	60	100

From the measurement results Anthropometric height/age shows that the number of toddlers who are stunted is 16.7% and toddlers with a normal status of 83.3%, 78.3% of respondents were pregnant at an age that was not at risk namely ages 20 years to 35 years. Respondents who have parity pregnancies that are not at risk (< 3 children) that is equal to 63.3%. Toddlers who have a history of low birth weight are 6.7%. As big as 48.3% of children do not get exclusive breastfeeding. Most toddlers have basic immunizations complete with a percentage of 80%. Some mothers skip HB0 immunization and measles at the age of 9 months so that 20% of toddlers have

incomplete basic immunization. Toddlers who received complementary feeding appropriately according to their age stage were 51.7%.

Table 2. results of bivariate analysis

Independent Variables	Dependent Variables : Stunting status				amount		*P-value*	PR 95% CI
	Stunting		Not stunting					
	n	%	n	%	N	%		
Maternal age at pregnancy:								2.410
Risky	4	30.8	9	69.2	13	100		(0.797- 7.285)
No risk	6	12.8	41	87.2	47	100	0.201	
Total	10	16.7	50	83.3	60	100		
Parity :								0.432
Risky	2	9.1	20	90. 9	22	100		(0.101-1.855)
No risk	8	21.1	30	78. 9	38	100	0.299	
Total	10	16.7	50	83.3	60	100		
Birth Weight :								6.0
Low birth weight	3	7.5	1	25	4	100		(2.453-14.678)
Normal birth weight	7	12.5	49	87.5	56	100	0.013	
Total	10	16.7	50	83.3	60	100		
Exclusive breastfeeding status :								4.276
Not exclusive breastfeeding	8	27.6	21	72.4	29	100		(0.989-18.493)
Exclusive breastfeeding	2	6.5	29	93.5	31	100	0.039	
Total	10	16.7	50	83.3	60	100		
History Basic Immunization :								1.000
Incomplete	2	16.7	10	83.3	12	100	1.000	(0.243-4.114)
Complete	8	16.7	40	83.3	48	100		
Total	10	16.7	50	83.3	60	100		
Complementary Feeding :								0.713
Not Exactly	4	13.8	25	86.2	29	100	0.732	(0.224-2.272)
Exactly	6	19.4	25	25.8	31	100		
Total	10	16.7	50	83.3	60	100		

Based on the results of bivariate analysis using Chi-square statistical calculations, it can be concluded that there is a relationship meaning between History Weight Birth (*p-value* = 0,013 and PR = 6) and History of ExclusiveBreastfeeding(*p-value* = 0.039 and PR = 4.276) to the incidence of stunting in toddlers aged 24-59 months in the work area Senabing Health Center in 2022 with a p value < 0.05. Toddlers with low birth weight are at risk 6 times higher to experience stunting and who do not receive exclusive breast milk are at risk 4.2 times higher to experience stunting.

There is no significant relationship between maternal age at pregnancy (*p-value* =0.201), parity (*p-value* = 0.299, history basic immunization (*p-value* =1.000), and history of giving complementary feeding(*p-value* =0.732)with the incidence of stunting in toddlers in the working area of the Senabing Health Center in 2022 with a p-value > 0.05.

Discussion

In this study, maternal age during pregnancy was categorized into two, namely age at risk (< 20 years or > 35 years) and age that is not at risk (20-35 years). The results showed that 21.7% of pregnant women were at risk and 78.3% of pregnant women at an age that is not at risk. The results

of this study are in line with research conducted by Julian, et al (2018)[9]that there is no relationship between the age of the mother during pregnancy and the incidence of stunting in toddlers in Pingaran Village Ilir Banjar Regency, South Kalimantan. Research conducted by Kholia et al (2020)[10] also stated similar results that the age of the mother during pregnancy was not related to the incidence of stunting in toddlers in Pekon Mulang Maya Village, Tanggamus District.

However, the results of this study are not in line with the research conducted by Sani, et al (2020) which states that there is a relationship between maternal age during pregnancy with the incidence of stunting in infants. Maternal age at pregnancy is related with the psychological condition of the mother and the mother's parenting style. Pregnant women at age those who are too young (<20 years) tend to have knowledge and experience unrelated to pregnancy and unprepared for pregnancy. Meanwhile mother people over 35 years of age tend to experience a decrease in parenting style due to decreased enthusiasm and stamina of the mother.[11]

The facts in the field, even though pregnant women are less than 20 years old, but most mothers still live with their parents so in Mothers under five can help with childcare and gain knowledge and experience from their parents. In addition, the factor of the mother's age during pregnancy is not is a direct causal factor in the occurrence of stunting. There are factors others that have a greater influence on the occurrence of stunting in toddlers such as history of birth weight, history of exclusive breastfeeding, energy and protein intake of toddlers, as well as a history of infectious diseases in infants.[10]

Parity is divided into two categories, namely risky and not risky. The parity category is at risk if ≥ 3 children, while the parity category is not at risk if < 3 children are born. The research results show parity in the working area of the Senabing Community Health Center is mostly not at risk, namely by 63.3%. Based on the results of bivariate analysis of mothers with parity at risk and having children who are stunted, namely 9.1%, while mothers with parity who are not at risk and have stunted children is 21.1%.

The results of this research are in line with research conducted by Norfai & Abdullah (2021)[12] on toddlers in the working area of the Pekauman Health Center Banjarmasin District which shows that there is no relationship between parity with the incidence of stunting. Other studies also show the same results that there is no relationship between parity and the incidence of stunting in toddlers (Ulfa & Handayani, 2018).[13]

This is different from research by Harahap et al (2019) which stated that mothers with parity more than equal to 3 will have a 5.7 times higher risk of having a toddler stunting compared to mothers who have parity in the no category risky (< 3).[14] Palino et al's (2019) research also states the same results There is a relationship between parity and the incidence of stunting in toddlers. Mother with Many parities will have a 3.25 times higher risk of having a toddler stunting. Parity is related to the mother's parenting style and feeding patterns. toddlers who are in a period of rapid

growth and development (1-2 years) really needs maternal stimulation and attention for cognitive development and motor skills of toddlers, in addition to fulfilling nutrition is also very important for toddlers in childhood growth to prevent nutritional problems in children. Mother with child The high population and low economic conditions tend not to be able to optimally meet the nutritional needs of toddlers so that they are vulnerable to deficiencies nutrition in toddlers.[15]

Most of the women in the village are included in the work area Senabing Health Center works as a farmer and housewife so that even though they have more than 3 children, mothers can still provide consistent parenting good to children. In addition, mothers also have free time to follow activities held by puskesmas such as posyandu and counseling which can add insight and knowledge of mothers related to growth and child development. mother still lives with her parents so deep The mother can help care for her children by other family members.

Infant birth weight in this study was divided into two categories. Birth weight low and normal birth weight babies. Includes low birth weight (LBW) category if < 2,500 grams while normal birth weight category if ≥ 2,500 grams. Results research shows that most of the respondents have birth weight normal (93.3%). Based on the results of bivariate analysis of 4 children who have low birth weight 3 of them experienced stunting with a percentage by 75%, while children with normal birth weight and experience stunting by 12.5%.

The results of this research are in line with the research conducted by Berhe et al (2019) on toddlers in Northern Ethiopia which shows that results Low birth weight is associated with the incidence of stunting, toddlers with low birth weight low risk is 5.3 times higher for experiencing stunting.[16] Research result others also mentioned similar results, toddlers who were born underweight low risk of experiencing stunting was 6.16 times greater in the study carried out in Umbulrejo Village.[17] Research conducted in India by Sk, Banerejee, and Rana (2021) also stated the same results that heavy Low birth weight increases the risk of stunting 2.22 higher.[18]

Low birth weight is a result of malnutrition experienced by the mother during pregnancy, causing Intra Uterine Growth Retardation. Children with low birth weight can have a bad impact on the health and development of children during the neonatal period. Child with LBW can experience a decrease in growth hormones such as the hormone insulin-1 (IGF-1) and thyroid hormone which causes linear growth (length/height body) is inhibited. In addition, bone growth can also be disrupted as a result decreased metabolism that depends on insulin levels.[16] Compared children with normal birth weight, children with birth weight Lower levels are more susceptible to infectious diseases, such as diarrhea, respiratory problems and chronic pneumonia, children will tire more easily, and lose their appetite eat so that it will cause physical growth that is not optimal.[19]

Providing breast milk without other food/drinks for 6 months is one of the government programs to overcome stunting in toddlers. Research result shows that 48.7% of toddlers do not

receive exclusive breastfeeding in the region work at the Senabing Community Health Center. Based on the results of bivariate analysis, breastfed toddlers do not exclusive and experienced stunting by 27.6%, while toddlers were breastfed exclusive and experienced stunting of 6.5%.

The results of this study are similar with research conducted by Tafesse et al (2021) in Southern Ethiopia, toddlers who do not receive exclusive breast milk have a 2.07 times higher risk of experiencing stunting.[20] Uwiringiyimana et al (2019) also stated that breast milk which is not exclusively one of the causes of stunting among toddlers in the province northern Rwanda, Africa.[21] Sugiyanto et al (2019) research in Bontang village East Kalimantan states that toddlers do not receive exclusive breast milk 6.71 higher risk of experiencing stunting.[22]

Colostrum is found in breast milk that comes out the first time you become pregnant antibodies that can protect babies from infectious diseases. Colostrum too contains the enzyme lysozyme which plays a role in inhibiting the growth of bacteria in babies. Colostrum contains high levels of protein and immunoglobulin A (igA) which functions to protect the surface of the baby's digestive tract from bacteria and viruses.[22] Breast milk has all the essential nutrients for growth and development, as well as increasing the baby's immunity during first 6 months of life. This can prevent failure to thrive (stunting) in toddlerhood.[21] If the toddler has immunity which is good and the possibility of contracting an infectious disease is very small, then The amount of food intake will not be disturbed so that nutritional problems are vulnerable occurs in toddlers that can be prevented, one of which is stunting.[23]In addition, breast milk has a calcium content that is different from calcium on formula milk. Calcium in breast milk will be absorbed better by the baby's body compared to formula milk, this can help support height growth in babies.[24]

Most of the toddlers in the working area of the Senabing Health Center have get complete basic immunization that is equal to 80%, while 20% Toddlers do not get complete basic immunization. Based on the results of bivariate analysis, the proportion of children with incomplete basic immunizations and stunting that is equal to 16.7%, while children with complete immunization and experiencing stunting also has a prevalence of 16.7%. Research result This is the same as the results of research conducted by Mugianti et al (2018) in the city Blitar.[25] Research conducted by Setiawan et al, (2018) in the city of Padang as well stated the same thing that there was no significant relationship between status basic immunization with the incidence of stunting in infants.[26] Similar results were found too in the research by Norfai et al (2021) which was conducted in the work area of the Puskesmas Pekauman City of Banjarmasin.[12]

However, other studies have presented different results. research that carried out by Wanda et al (2021) states that immunization is not complete in toddlers can increase the risk 4.958 times greater for stunting occurs.[27]Rakotomanana et al (2017), stated that immunization is a direct causative factor for stunting in toddlers under 5 years old.[28] Other research also shows that toddlers

with a history of basic immunization those who are incomplete have a 3,160 times higher risk of experiencing stunting.[29]

Immunization can help mothers to have access to health services and meet more with health workers. This matter can increase mother's knowledge related to nutritional problems that are prone to occur to toddlers are thus expected to have a good impact on nutritional status of toddlers.[30] Apart from that, immunization for toddlers aims to prevent transmission of certain infectious diseases by raising antibodies, so the risk of morbidity (illness) and infant mortality (death) can be reduced. Toddlers with good immunity can prevent the occurrence of infectious diseases that impact on reduced appetite eating and intake deficiencies so that it can reduce the risk of stunting in toddlers.[27]

Infectious diseases in toddlers can be prevented in addition to basic immunization complete, namely with good home environmental sanitation and usage clean air. Villages included in the working area of the Senabing Health Center most already have a well and a private bath attached to it in the Healthy Village House (RDS) program held by the Puskesmas as stunting prevention efforts. In addition, most mothers of toddlers have work as a farmer who only works in the morning and a housewife so that the mother has enough time to clean the home environment and participate in activities carried out by puskesmas officers such as counseling and toddler posyandu.

In this study, the history of complementary feeding provision in the Puskesmas work area Senabing is categorized into 2, namely appropriate and inappropriate. Includes categories The history of giving complementary feeding is appropriate if the texture, frequency and quantity match with toddler age and is categorized as inappropriate if the texture, frequency and quantity do not match with toddler age. The research results show that as many as 51.7% of toddlers have a history of giving complementary feeding appropriate and 48.3% of toddlers had a history of giving complementary feeding incorrectly. Based on the results of the bivariate analysis, as many as 13.8% of toddlers received inappropriate complementary feeding and experienced it stunting, while 19.4% of toddlers got the right solids and experienced stunting. Nur Hadibah's research in 2019 also states the same thing that there is no relationship significant relationship between the texture, frequency and amount of complementary feeding and the incidence of stunting in toddlers in the working area of the Maron Health Center, Probolinggo Regency.[30]

Unlike the research conducted by Virginia et al (2020) on toddlers in Leyangan village who stated that the history of giving complementary feeding effect on the incidence of stunting in infants. The texture of complementary feeding is not right has a risk of 3.304 times higher, the frequency of complementary foods that is not right is risky 4.531 times higher, and the number of inappropriate complementary feeding is at risk of 3.6 times higher for toddlers to experience stunting. If complementary feeding is given, no according to the age of the toddler, it will be at risk of insufficient food intake and will have an impact on the nutritional status of children.[31]

The results of this study stated that there was no relationship between history of givingcomplementary feedingwith the incidence of stunting. It can happen because the indicators used are only reviewed from the texture, frequency, and amount complementary feeding. But in terms of the quality of complementary feeding, such as the completeness of nutrients and The diversity of food ingredients used was not examined. If complementary feedingis given that it does not have complete and non-diverse nutrients, it will increase the risk of toddlers experiencing certain nutritional deficiencies that can inhibits the linear growth of toddlers.[30]

Conclusion

There was a relationship between history of birth weight (p-value = 0.013 and PR = 6) and history of exclusive breastfeeding (p-value = 0.039 and PR = 4.276) with the incidence of stunting in children under five in the working area of Pusekesmas Senabing 2022. There was no relationship between maternal age during pregnancy, parity, history of basic immunization, and history of complementary feeding with the incidence of stunting in children under five in the working area of Pusekesmas Senabing 2022. Toddlers with low birth weight are at risk 6 times higher to experience stunting and who do not receive exclusive breast milk are at risk 4.2 times higher to experience stunting.

It is expected that mothers who are planning a pregnancy will maintain their status nutrition from the pre-pregnancy period until delivery to prevent the occurrence of LBW and the mother is expected to provide exclusive breast milk from birth to 6 months so that children do not experience stunting.

Acknowledgement

Thank you to the Faculty of Public Health, Sriwijaya University, for granting permission for the research, and the Senabing health center, Lahat District, for agreeing to be the location for the research.

Funding

This research did not receive research grants from any party.

Conflict of Interest

The authors do not have any conflicts of interest.

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