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Analysis of Medicosocial Determinant Factors in Mothers with Stunted Children

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ABSTRACT

Introduction: Stunting is a linear growth disorder caused by malnutrition in chronic nutrient intake and chronic recurrent infectious diseases as indicated by height z-score according to age. Infancy is a period that is very sensitive to the environment so more attention is needed especially the adequacy of nutrition. Obstetric complications are very influential on several determinant factors, one of these factor is medical social or social risk. Family socioeconomic status such as family income, parental education, mother's knowledge about nutrition, and the number of family members can indirectly relate to stunting.

Methods: A cross sectional analytic with a retrospective approach. Processing data using regression tests.

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Result: The results of this Stunting study were obtained from nutritional status data on children under five in the province of West Sulawesi in January-June 2020 by taking samples using simple random sampling. The total number of samples in this study were 88 people taken from mothers who have Stunting children aged 2-5 years. Social risk is the condition of the mother during pregnancy including age, level of education, ethnicity, occupation, income, referral decision, cost considerations, distance traveled, referral mobilization, consideration of health insurance that is expected to be related to stunting.

Conclusion: In this study, it was found that the most influential medicosocial determinants were referral mobilization and employment.

Key words: Stunting; medicosocial; pregnancy

Introduction

Stunting is a linear growth disorder caused by malnutrition in chronic nutrient intake and / or chronic and recurrent infectious diseases as indicated by the z-score of height for age (TB / U) less than –2 standard deviation (SD) based on World Health Organization standards. (WHO). (1–3)

According to the findings of the 2010 Basic Health Research (Riskesdas 2010), the prevalence of short children under the age of five has decreased by just 1.2 percent, from 36.8% in 2007 to 35.6 percent in 2010, while the RPJMN's goal for the prevalence of short children under the age of five must be reduced to 32% in 2014.(4,5)

Globally, one out of every four children under the age of five is stunted (UNICEF, 2013). According to the findings of basic health research (Riskesdas) in Indonesia, 37.2 percent of children under the age of five were stunted in 2013. It is known that 19.2 percent of children are short, and 18.0 percent are really short, based on this figure. In comparison to the 2010 Riskesdas, where 35.6 percent of children were stunted, the incidence of stunting has risen. (4,5)

The high prevalence of stunting among children aged 0 to 23 months in Indonesia today threatens the country's human resources (HR). Indonesian people are of poorer quality than those in neighboring Malaysia, Thailand, and the Philippines. In 2011, Indonesia was ranked 124th out of 187 countries on the Human Development Index (HDI), with Malaysia 61st, Thailand 103rd, and the Philippines 112nd.. (2)

West Sulawesi, with a stunting rate of 39.7%, is the province with the most stunted infants in Central Indonesia. Quite small toddlers account for 14.7 percent of the total and 25 percent of the total. Meanwhile, Bali had the fewest stunted babies, with just 19.7%, including 5.2 percent really short babies and 14.5 percent short babies.

Indirectly, family socioeconomic status, such as family income, parental education, mothers' dietary skills, and the number of family members, may be linked to the incidence of stunting. The findings of Riskesdas (2013) indicate that low parental income and education have a significant impact on the incidence of under-five stunting. (4,6)

Obstetric complications greatly influence several determinants, one of which is social medicine. This factor is a complex problem because it is related to many things such as health status including reproductive health status and maternal nutritional status before and during pregnancy. The incidence of obstetric complications is present in about 20% of all pregnant women, but cases of obstetric complications that are set for early 2012 to the end of 2016 are at least 12% of all pregnant women or 60% of cases of obstetric complications. The increase in cases of complications mentioned above is caused by social and medico obstetric determinants. Where are the social determinants, such as age, income, motivation, education, work and belief. (3)

The authors are interested in conducting research on social medical determinants of pregnant women

on the incidence of stunting babies in Mamuju Regency, West Sulawesi, because of the high incidence of stunting in Central Indonesia, specifically West Sulawesi Province, particularly in Mamuju Regency. Stunting is common in West Sulawesi, especially in the Mamuju District. With the goal of determining the social medico-determinant factors that have the greatest impact on pregnant women with stunted babies in Mamuju Regency, West Sulawesi.

Methods

This type of research is an analytical survey. The research design used was a cross sectional approach (cross sectional) with a retrospective approach in which the cause and effect variables (related and independent variables) were measured at the same time and moment (point time approach).

The research was conducted in West Sulawesi Province's Mamuju Regency. The research was conducted from June to August 2019 in accordance with LP2S UMI's schedule. The subjects were stunted children in Mamuju Regency, West Sulawesi Province, in June - August 2019. people meeting the inclusion criteria. Stunting babies aged 2 to 5 years old, as well as their mothers, were willing participants in this study. Questionnaires, observation sheets, and checklists were used to collect data in this study. The regression test was used in this data analysis.

The operational definition of stunting variable is children aged 2-5 years with nutritional status based on Body Length (BL) / Age(A) or Body Height (BH) / Age (A) z-score <-2SD to -3SD for short status and <-3SD for very short status. In addition, the occupational variables are civil servants and non-civil servants. Maternal age at pregnancy is said to be at risk if it is less than 25 years and more than 35 years, while not at risk at the age of 25-35 years. Income is income per month which is divided into> 2.5 million and <2.5 million according to local UMR standards. And referral mobilization is a means of transportation used to mobilize patients to referral points. Mileage is the distance between the reference place and the reference location, which is divided into> 15 km and <15 km. The referral decision is the family / relative who gives written consent for the patient's referral.

Result

The results of this stunting study were derived from simple random sampling of data on the nutritional status of children under the age of five in West Sulawesi province from January to June 2020. In this study, a total of 88 people were sampled, all of whom were mothers with stunted children aged 2 to 5. Because the effect of malnutrition on height would appear over a long period of time, the age range was chosen.

The following preliminary data on the nutritional status of children in West Sulawesi Province were obtained for this study:

Table 1. Initial nutritional status data for children in West Sulawesi based on their height and age.

Regency/City	Very Short				Short				Normal			
	0-2 Years		2-5 Years		0-2 Years		2-5 Years		0-2 Years		2-5 Years	
	L	P	L	P	L	P	L	P	L	P	L	P
Majene	335	221	797	622	396	314	967	916	1354	1302	1687	1646
Polewali Mandar	467	285	1341	980	998	673	2447	2037	4315	4109	6419	5892
Mamasa	219	113	460	289	308	222	799	615	1234	1089	2646	2419
Mamuju	470	393	869	740	347	264	640	580	2766	2467	3861	3366
Mamuju Utara	195	85	456	339	273	186	921	752	1720	1690	2981	2854
Mamuju	33	19	116	72	81	37	198	152	541	465	1080	841

Tengah												
Total	1719	1116	4039	2420	2403	1696	5972	5052	11930	11122	18674	17018

Source: Primary Data

Stunting assessment uses the BL/A criteria, so in table 3, the number of cases of stunting based on Body Height (BH / Age (AM) in Mamuju District, West Sulawesi at 2-5 years old is 869 men and 740 women with a total of 1609 people child.

Table 2 Analysis of the medicosocial determinants of the incidence of stunting

Variable	Stunting Status						*r*
	Short		Very Short		Total		
	n	%	n	%	n	%	
Mother's Age							
At Risk	22	25	33	37,5	55	62,5	**0,024**
No Risk	14	15,9	19	21,6	33	37,5	
Tribe							
Mandar	25	28,4	35	40	60	68,4	**0,031**
Bougenese	6	6,8	8	9	14	15,8	
Makassar	3	3,4	5	5,6	8	9	
Java	2	2,3	4	4,5	6	6,8	
Profession							
Civil Servant	8	9,1	20	22,7	28	31,8	**0,171**
Non Civil Servant	28	31,8	32	36,4	60	68,2	
Income							
<2,5Million	14	15,9	17	19,3	31	35,2	**0,064**
>2,5 Million	22	25	35	39,8	57	64,8	
Referral Decision							
Husband	20	22,7	33	37,5	53	60,2	**0,092**
Family	9	10,2	13	14,8	22	25	
Self	5	5,7	3	3,4	8	9,1	
Parents	2	2,3	3	3,4	5	5,7	
Cost Considerations							
Yes	3	3,4	3	3,4	6	6,8	**0,05**
No	33	37,5	49	55,7	82	93,2	
Mileage							
< 15 Kms	34	38,6	50	56,8	84	95,4	**0,04**
> 15 Kms	2	2,3	2	2,3	4	4,6	
Referral Mobilization							
Ambulance	28	31,8	34	38,6	62	70,4	**0,129**
Self-Help Car	4	4,5	10	11,4	14	16	
Motorcycle/Motorized Pedicab	4	4,5	7	7,9	11	12,5	
Private Car	0	0	1	1,1	1	1,1	

Source: Primary Data

Based on the data above, it appears that there is a very weak relationship between the mother's age factor and the incidence of stunting with r 0.024, where the age at risk is more dominant in causing stunting (62.5%) with detailed data, namely the very short stunting status, which is 37.5 percent, and the short stunting is 25%. Also, based on this data, it appears that there is a very weak relationship between ethnic groups and the incidence of stunting (r 0.031), with the incidence of stunting being more prevalent in the Mandar tribe in this table. With a r of 0.171, it appears that there is a very weak relationship between work and the incidence of stunting, with non-civil servant jobs being more dominant in causing stunting (68.2%), with data showing that stunting status is very short, namely 36.4 percent and short stunting status is 31.8 percent. With a r of 0.064, there is a very weak relationship between income and the incidence of stunting, with income > 2.5 million being more dominant in causing stunting (64.8 percent) and data showing that stunting status is very short, namely 39.8 percent and short stunting status is 25 percent.

In the data above, it appears that the referral decision has a very weak relationship with the incidence of stunting and r 0.092. When it comes to referral decisions, the husband has a greater influence than the others. With r 0.050, we discovered a very weak relationship between cost considerations and the incidence of stunting. Without the influence of cost considerations, the incidence of stunting is higher in families.

With r 0.040, a very weak relationship was found between the distance traveled and the incidence of stunting, with the incidence of stunting being higher at distances of 15 km, 95.4 percent. According to this data, there appears to be a very weak relationship between referral mobilization and the incidence of stunting and r 0.129, with referral mobilization using ambulance dominating at 70.4 percent.

Discussion

Because toddlers do not appear to be sick, the problem of malnutrition or stunting is not easily recognized by the government, society, or even families. Malnutrition, such as malnutrition in adults, is not always preceded by a lack of food and hunger. This means that even when food is plentiful, malnutrition in children under the age of five may occur. Age, education level, ethnicity, occupation, income, referral decision, cost considerations, mileage, referral mobilization, and health insurance considerations are among the risk factors examined in this study to determine the possible causes of stunting. (7,8)

The sample in this study were mothers who had stunted children aged 2-5 years. The age ive range was chosen because the effect of malnutrition on height would appear in a relatively long period of time. This is because the group of toddlers aged 2 years and over is more at risk of suffering from stunting compared to children under 1 year of age. Toddlers aged 0-23 months have a low risk of stunting because of the protection they get from breast milk.(9)

The largest ethnic group in this study is the Mandar tribe, this could be because the indigenous tribe in

Mamuju is the Mandar tribe, while several other tribes, namely Bougenese, Makassar and Javanese in the research subject are residents who have lived and worked in Mamuju for a long time.

The age factor on the incidence of stunting was found to have a very weak relationship with r 0.024, where the age at risk was more dominant to cause stunting (62.5 percent) with data that the stunting status was very short, namely 37.5 percent and the short stunting status was 25 percent. Early marriage may put mothers at risk at a young age. According to the World Health Organization, early marriage is defined as marriage before the age of 18 years, and the causes of early marriage include a variety of factors, one of which is societal cultural and social norms. Having a mother marry at a young age results in a lack of psychological readiness for the mother as well as a lack of knowledge about nutrition and parenting for the children, which can result in stunting. Ingka et al found that was correlation between early marriage and teen pregnancy and toddler stunting. The study found that toddlers with parents who married young were more susceptible to growth and development disorders. (10–13)

Based on maternal income, it appears that there is a very weak relationship between income and the incidence of stunting with r 0.064, where income> 2.5 million is more dominant in causing stunting (64.8%) with data that stunting status is very short, namely 39.8% and short stunting status is 25%. This is different from the research of Aridiyah et al (2015) where the results of the study of mothers who had more stunted children at low economic status in North Maluku. In this study, even having a high level of maternal income was found to be a risk factor for stunting. This could be due to mothers' lack of knowledge about proper child nutrition. The mother's understanding of nutrition will influence her behavior when it comes to feeding her child. Mothers who are well-versed in nutrition can provide the appropriate type and quantity of food to support their children's growth and development.(14,15)

The relationship between the incidence of stunting in children and work has a very weak relationship with *r* 0.171 where, non-civil servant jobs are more dominant in causing stunting (68.2%) with data that the stunting status is very short, namely 36.4% and short stunting status is 31.8. %. This means that it is in line with what has been researched by Farah et al. That work does not have a strong relationship to the incidence of stunting. However, it is different from the research conducted in the city of Semarang, that work has a significant effect. It was found that mothers who have jobs tend to be short. This can happen because working mothers do not have much time to accompany their children, especially in providing good nutrition. Non-civil servant jobs such as self-employed people have less time with their children than civil servants who already have predetermined working hours.(2,11)

The relationship between the decision to referral was obtained by a very weak regression test between the referral decision on the incidence of stunting with a r 0.092. In the referral decision, the husband is more dominant in making decisions than the others. This could be because the husband is the head of the household so that more decisions are made by the husband.(16)

The distance obtained in the study is dominant at <15 km, namely 95.4% with an r value of 0.040, which is a very weak relationship between the incidence of stunting and the distance traveled. Children to the referral hospital for examination of nutritional status.

In this study also found a very weak relationship between mobilization of referrals to the incidence of stunting with a reference of 0.129, where mobilization of referrals using ambulance was more dominant, namely 70.4%. In this case, it can be seen that the participation of regional health facilities towards facilitating stunting children to be taken to a referral hospital in order to receive more specific monitoring by pediatricians and nutrition specialists in their growth and development.

Based on the results of the bivariate analysis, there is a very weak relationship between income with stunting status, ethnicity with stunting status, work with stunting status, income with stunting status, decision on referral with stunting status, consideration of costs with stunting status, distance traveled with stunting status and referral mobilization. with a stunting status. In addition to medicosocial factors, there are several other factors that can influence such as the mother's knowledge of good parenting and the nutrition the child needs for growth and development, medicoobstetry and maternal nutrition during pregnancy can be a factor in child stunting as well.

Conclusion

Based on the results of the research we conducted regarding the analysis of medicosocial determinant factors in mothers with stunted children in Mamuju district, West Sulawesi based on age, ethnicity, occupation, income, referral decisions, consideration of costs, distance traveled and referral mobilization, it can be concluded that the most influential determinants are employment and referral mobilization.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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