

Age, Education, and Maternal Knowledge Related to Stunting Incidents in Patianrowo District, Nganjuk

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ABSTRACT

Stunting is a condition where toddlers fail to grow due to chronic malnutrition for a long time. Stunting is caused by a many of factors, such as age, education, and maternal knowledge. The purpose of this study was to determine the relationship between age, education and maternal knowledge with the incidence of stunting at the Posyandu in Ngepung Village, Patianrowo District, Nganjuk. This type of research is an Analytical Survey with a cross-sectional approach. The sample used in this study was 100 respondents (mothers and toddlers) at the Posyandu in Ngepung Village, Patianrowo District, Nganjuk Regency. The sampling technique used was total sampling. The instrument used was a Questionnaire. Data analysis used was in the form of univariate to multivariate analysis. Data frequency is shown via univariate analysis. The Chi-Square Test is used in bivariate analysis. Lastly, the Multiple Linear Regression Test is used in Multivariate Analysis. According to the study's findings, there is a relationship between the incidence of stunting and age (p-value = 0.008; b = 1.332, OR = 0.264), maternal education (p-value = 0.032; b = 1.244, OR = 0.288), and maternal knowledge (p-value = 0.000; b = 2.016, OR = 7.511). In order to prevent stunting in Indonesia, health professionals are supposed to be able to offer regular counseling as well as advice on proper diet for their children.

Keywords: Age; Education; Maternal Knowledge; Stunting

INTRODUCTION

Stunting is a problem for toddlers in Indonesia. According to Riskesdas data from 2022, 30.8% of Indonesian toddlers were stunted. The prevalence of stunting in toddlers in East Java in 2022 was 19.2%. Nganjuk Regency is one of the regencies that has cases of stunting in toddlers. The prevalence of stunting in toddlers in Nganjuk Regency in 2022 was 20%.¹ While in 2023 it was 17.1%.² Based on the monthly weighing data by the Nganjuk Regency Health Office in January 2024, Patianrowo District is one of the districts that is the locus of stunting in Nganjuk Regency because the number of stuntings based on its prevalence is 11.8%.

Stunting is a condition where toddlers fail to grow due to chronic malnutrition for a long time.³ Stunting problems that occur in toddlers will cause long-term and short-term effects, such as being susceptible to infection, poor educational achievement, lower average IQ, and risks to pregnancy and reproduction in adulthood. If this is not resolved immediately, it could result in lower quality of human resources or future generations.⁴ There are numerous (multifactorial) causative reasons for stunting. The maternal age, knowledge, occupation, education, spacing of births, parenting styles, nursing habits, and prenatal

checkups are some of the elements that contribute to stunting from the maternal.⁵ Maternal age is one of the variables that affects the prevalence of stunting. Mothers under 25 years still need a lot of nutrition for their growth period so that there will be competition for nutrition between the mother and her child.⁶ In addition, the more mature the maternal age, the more she does not only rely on experience but also increases her knowledge. So that indirectly, age can affect the maternal knowledge regarding nutrition and the child's health.⁷ The prevalence of stunting may be indirectly impacted by maternal education. The level of education of a mother has influenced how she organizes her home, particularly when it comes to providing for her family's nutritional needs. The ability and concern of the mother to choose food ingredients for the family and her children would be impacted by low maternal education.⁸ As a result of inadequate nutrition, children of mothers with poor levels of education are more likely to be stunted.⁹ Maternal education is also related to maternal knowledge. Her knowledge increases with her level of education. Maternal knowledge regarding nutrition can include all forms of information obtained regarding food substances including their sources and functions that are needed by the toddler's body. Maternal knowledge will affect the behavior of toddler feeding patterns. Good feeding patterns will improve health, especially nutrition in

toddlers. However, on the other hand, if the maternal knowledge about toddler nutrition is lacking, it will have an impact on the lack of ability to apply good toddler nutrition which will later affect the toddler's nutritional status.¹⁰ The prevalence of stunting will keep rising as the consequence of poor nutritional status.

In the first year of life, mothers have an important role in the health and nutrition of their children (Zebua, 2019). The child's quality of life will be determined by the role moms perform in parenting styles. From age and education to knowledge, the maternal personality will have a significant impact on her parenting style. For this reason, researchers are interested in analyzing how mother knowledge, age, and education relate to stunting incidents.

MATERIALS & METHODS

This study is an Analytical Survey with a cross-sectional approach. The sample used in this study was 100 respondents (Mothers and toddlers) at the Integrated Health Post (Posyandu) in Ngepung Village, Patianrowo District, Nganjuk Regency. The sampling technique used was total sampling. The instrument used was a Questionnaire. Data analysis used was univariate to multivariate analysis. Univariate analysis shows data frequency. Bivariate analysis uses the Chi-Square Test. Finally, Multivariate Analysis uses the Multiple Linear Regression Test.

RESULT

Table 1. Characteristics of Mother and Child

Characteristics	Frequency (f)	Percent (%)
Children		
Age of Child		
0 – 38 month	77	77.0
39 – 60 month	23	23.0
Sex of Child		
Female	63	63.0
Male	37	37.0
Stunting		
Stunted	13	13.0
Non Stunted	87	87.0
Maternal		
Maternal Age		

20 – 32 years	70	70
33 – 45 years	30	30
Maternal Education		
High	34	34.0
Low	66	66.0
Maternal Knowledge		
Low	19	19.0
Middle	18	18.0
High	63	63.0
Total	100	100.0

Based on table 1, it is found that almost half of the toddlers are aged 0-38 months (77%), most of them are female (63%), and almost all of them non stunted (87%). Meanwhile

in maternal characteristics, it is found that most of the mothers of Children are aged 20-32 years (70%), Low education (66%), and Knowledge Level in high level (63%).

Table 2. Cross-tabulation results between age, education, and maternal knowledge

Variable	Stunting				Σ		P
	Stunted		Non-Stunted		f	%	
	f	%	f	%			
Maternal Age							0.008
20 – 35 years	5	7.1	65	92.9	70	100	
35 – 45 years	8	26.7	22	73.3	30	100	
Maternal Education							0.032
High	1	4.5	33	95.5	34	100	
Low	12	18.2	54	81.8	66	100	
Maternal Knowledge							0.000
Low	11	57.9	8	42.1	19	100	
Middle	0	0.0	18	100	18	100	
High	2	3.2	61	87.0	63	100	

Bivariate analysis was used to compare the independent variables (age, education, maternal knowledge) and the dependent variables (stunted and non-stunted). Based on table 2, shows that all independent variables have a relationship with the

dependent variable. Maternal Age has a relationship with the incidence of stunting (p-value = 0.008), Education with the incidence of stunting (p-value = 0.032), and maternal knowledge with the incidence of stunting (p-value = 0.000).

Table 3. Multiple Linear Regression Analysis Results

Variable	B	OR	CI (95%)	P
Maternal Age	-1.332	0.264	0.058 – 1.198	0.084
Maternal Education	-1.244	0.288	0.026 – 3.160	0.309
Maternal Knowledge	2.016	7.511	2.570 – 21.949	0.000

Multiple linear regression test in table 3 shows that from the three independent variables (age, education, and maternal knowledge), maternal knowledge has the greatest impact on the incidence of stunting in toddlers (P = 0.000; b = 2,016; and OR = 7,511).

DISCUSSION

This study shows that out of 100 mothers and toddlers, it was found that the age of the

mother was mostly 20-32 years old, as many as 70 respondents (70%). Age has a significant relationship with the incidence of stunting where the p-value shows 0.008 (b = 1.332, OR = 0.264). This study is in line with other studies where age has a significant relationship with the incidence of stunting p-value = 0.001 (p <0.05, OR = 4.239).

Maternal age is one of the variables that affects the prevalence of stunting. Mothers

under 25 years still need a lot of nutrition for their growth period so that there will be competition for nutrition between the mother and her child.⁶ In addition, the more mature the maternal age, the more she does not only rely on experience but also increases her knowledge. So that indirectly, age can affect the maternal knowledge regarding nutrition and the child's health.^{5,7}

Based on this study, it shows that maternal education has a relationship with the incidence of stunting where the p-value shows 0.032 (b = 1.244, OR = 0.288). This study is in line with other studies where there is a significant relationship between maternal education level and the incidence of toddler stunting in South Tapanuli where the p-value = 0.000 (p < 0.05, OR = 2.869).¹¹

Other studies also support this study, where the level of education has a relationship with the incidence of stunting in toddlers in Lhoksuemawe City, Aceh, Indonesia with a p-value = 0.000 (p < 0.05).¹²

Education is one of the important factors that can affect the health of a person and their family. A person with a high level of education will find it easier to receive information related to health on an ongoing basis and accept the concept of healthy living which is then applied in everyday life.¹¹ According to UNICEF, malnutrition suffered by stunted children is caused by inadequate food consumption and infectious diseases that may be experienced by the child. In addition, low food security, poor environmental sanitation, poor parenting patterns and poor health services are also the main problems of malnutrition in children.⁹ The role of mothers is very important in a family, where a mother will determine the parenting pattern given, especially in meeting the nutritional needs of the child. Fulfilment of nutritional needs includes choosing food ingredients, providing regular food, to the type and content of food given according to the taste of toddlers.^{13,14}

Mothers with higher education tend to be better in parenting patterns related to nutritional needs for their children. In

addition, receiving, accessing, and understanding information about nutritional status and children's health will be different if the maternal education is high. Various information that has been received by the mother is then practiced in the process of caring for children which can later have an impact on better child health.^{9,12} This will be different if the maternal education is low. The results of this study indicate that most mothers of toddlers have low education, as many as 66 mothers of toddlers (66%) with 12 mothers of toddlers having stunted children. Low maternal education in Indonesia can be caused by the community still assuming that education is not very important and family support for the continuation of higher education is still quite low. Low maternal education will affect the maternal ability and concern in choosing food ingredients for the family and her child (Hidayah, 2023). The quality and quantity of food ingredients that are lacking will affect the nutritional adequacy of toddlers. Sustainable nutritional adequacy will affect the growth and development of toddlers.¹⁵

Maternal Education is related to maternal knowledge. The higher the education, the more knowledge she has. Knowledge is the result of knowledge that someone gets after sensing, namely hearing, sight, smell, taste and touch. Knowledge can be influenced by several factors, including the environment, exposure to information, education, socio-culture, and experience.¹⁶ Exposure to information will affect a person's level of knowledge. Sufficient exposure to information will support a person's knowledge even though their education is not high. However, the ability to grasp knowledge will be much better if they have a high education. Therefore, good knowledge will be formed when the ability to grasp and the thinking process of each person can be formed properly.¹⁴

This study shows that maternal knowledge regarding nutrition has a significant relationship with the incidence of stunting with a p-value = 0.000 (b = 2.016, OR =

7.511). This study is in line with other studies showing that maternal knowledge has a significant relationship with the incidence of stunting in toddlers in Gunung Kidul Regency with a p-value = 0.00 ($p < 0.05$).¹⁷ Other studies also show that the p-value = 0.016 ($p < 0.05$), where maternal knowledge has a relationship with the incidence of stunting in Cigugur Tengah sub-district.¹⁴

Knowledge will affect a person's attitude and behavior, especially related to health. Good maternal knowledge will affect decision making in choosing food. The better the maternal knowledge about nutrition, the better she will be in considering the type and amount of food for consumption by her child and family, supported by higher education, extensive experience and adequate information.^{9,14} Thus, good knowledge will lead mothers to positive behavior and attitudes towards health. However, if the maternal knowledge about nutrition is lacking, the implementation of nutritional fulfilment in toddlers will tend to decrease. If this continues, nutrition in toddlers will be disrupted which can trigger stunting in the future.^{13,14}

CONCLUSION

This research shows that there is a relationship between age, education, and maternal knowledge to the incidence of stunting in Pantianrowo District, Nganjuk. Based on the results of the multivariate test, it was found that maternal knowledge is the indirect factor that most affects the incidence of stunting. In order to prevent stunting in Indonesia, health professionals are supposed to be able to offer regular counselling as well as advice on proper diet for their Children.

Declaration by Authors

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