



ANALYSIS FACTORS RELATED TO THE DEVELOPMENT OF TODDLER

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ABSTRACT

BACKGROUND: Toddler age entered in the golden age stage because the development and growth at that stage affect the subsequent development. Early childhood development is one of the programs in the Sustainable Development Goals to be a priority to be achieved in 2030. Many factors can influence children's development. Health professionals and parents need to understand this to avoid factors that can cause children to experience developmental delays.

OBJECTIVES: to find factors related to the development in toddler.

METHODS: A present cross sectional study was conducted from April to September 2019 in Public Health Depok 1 Sleman, Indonesia. Sampling method employed was Accidental sampling with 60 respondent. Factors the influence development in toddler collected by questionnaire and toddler development was assessed using the pre development screening questionnaire from the ministry of health. Multivariate analysis used logistic regression tests and bivariate analysis used the fisher test.

RESULTS: The logistic regression test results showed that the education level of the mother had a value of $p = 0.017$ and OR 0.077. The nutritional status of children shows the value of $p = 0.032$ and OR 0.98.

CONCLUSION: There is a relationship between the level of mother's education and the nutritional status with the development in toddlers. Children with low-educated mothers have a 0.077 fold risk of developing developmental problems and children who have less nutritional status have a 0.098 fold risk of developing developmental problems. Health workers need to educate the factors that can influence children's development to parents.

KEYWORDS : Toddler; Development; Factors

INTRODUCTION

Toddler enter the stages of golden age, window of opportunity, and a critical period because that age a child experiences development and growth that will affect the child's subsequent development. At this time children also experience periods that are vulnerable to negative influences. The quality of growth and development of children must get serious attention for families and countries because children are the nation's next generation (The Indonesian Ministry of Health, 2016). The Global Burden of Disease Study said that 52.9 million children under the age of 5 had developmental problems (Global Research on Developmental Disabilities Collaborators, 2018). The Indonesian Ministry of Health reports that in 2010 11.5% of children experienced development and growth disorders. The Indonesian Pediatrician Association (IDAI) (2013) estimates that 5-10% of children experience developmental delays and 1-3% experience general developmental delays. Therefore it is important for parents to know the stages of child development and the factors that influence it so that parents can avoid factors that can cause children to experience developmental delays.

MATERIAL AND METHODS

This was observational analytic study with the cross sectional approach, conducted from April to September 2019 in public health region Depok 1, Sleman, Indonesia. The study subject were mothers and toddler (12 months - 36 months). Accidental samplings was used to select the 60 respondent with inclusion criteria: child lived with the mother, the child did not have a physical disability and the exclusion criteria: the child was sick when the data collected.

Information related characteristics and factors that influence child development (nutritional status, maternal employment status, maternal education level, birth weight and history of

prematurity, the role of mothers in meeting the basic needs of children) recorded in semi-structured self administrated questionare. KPSP questionnaire (Pre-Screening Development) as a guideline for assessing child development for ages 0-72 months issued by the Indonesian Ministry of Health as well as questionnaires for the role of mothers in meeting the basic needs of children who have been tested for validity and reliability are carried out in Ringinsari Hamlet, Depok, Sleman. Validity test uses the Product moment formula with the results of r count more than 0.361 and the validity test uses Alpha Cronbach with 0.912 results.

STATISTICS

Data were analyzed and interpreted using descriptive statistics and bivariate analysis used the Fisher test. While multivariate analysis used logistic regression. The level of significance determined in this study was $p < 0.05$.

ETHICS

This study has obtained information on research ethics approval issued by the Health Research Ethics Commission of the Faculty of Health, Jenderal Ahmad Yani University, Yogyakarta, number: SKep/066/KEPKV/2019.

RESULT

Table 1 shows the sociodemographic of the study subjects. It was seen that maximum (51.7%) mother belonged to the age group of 26-35 years and child 12-24 month. About half (51.7%) subjects from male.

Table 1: Sociodemographic information

Demographic Variables	Frequency	Percentage(%)
Age of Mother	7	11,7
17-25 years	31	51,7
26-35 years	22	36,6
36-45 years		

Age of Child	37	61,7
12 – 24 Months	23	38,3
25 – 36 Months		
Gender of child	31	51,7
Male	29	48,3
Female		
Total	60	100

Table 2 shows factors related to the development of toddler in the study. It known that the role of mothers in meeting the basic needs of children between good and less categories has the same percentage of 50%. Most of the mothers do not work 31 people (51.7%), mothers have high education level of 49 people (81.7%), the nutritional status of children in the good nutrition category are 47 people (78.3%). Most children were born with normal body weight of 56 people (93.3%) and most did not have a preterm history of 59 people (98.3%).

Table 2: Frequency Distribution of Factors Related to the Development of Toddler

Variable	Frequency	Percentage(%)
The role of mother in meeting the needs of children		
Good	30	50
Not Good	30	50
Mother's employment status		
Not Working	31	51,7
Working	29	48,3
Mother's Education Level		
High education	49	81,7
Basic education	11	18,3
Children's Nutrition Status		
Good	47	78,3
Not Good	13	21,7
Birth Weight		
Normally birth weight	56	93,3
Under Normally birth weight	4	6,7
Prematurity History		
Not Prematur	59	98,3
Prematur	1	1,7
Total	60	100

Table 3 shows that the majority of toddler-age children have a corresponding development of 95%. Only 5% of children have doubtful child development.

Table 3: Frequency Distribution of Development of Children under five

Child Development	Frequency	Percentage(%)
Normal	57	95
Suspect	3	5
Jumlah	60	100

Bivariate analysis factors associated with the development of toddler shown the results of each development factor using the fisher test, there are 3 child development factors that have a value of $p < 0.25$, namely the role of the mother in meeting the child's basic needs ($p = 0.119$), the level of education of the mother ($p = 0.084$), and the nutritional status of children ($p = 0.115$). Furthermore, 3 factors entered into multivariate analysis using logistic regression tests.

Table 4: Bivariate Analysis of Factors Related to the Development of Toddler

Dependent Variables	Development of Child		p value
	Normal f (%)	Suspect F (%)	
The role of mother in meeting the needs of children			0,119*
Good	30(100)	0(0)	
Not Good	27(90)	3(10)	

Mother's employment status			0,525
Not Working	29(93,5)	2(6,5)	
Working	28(96,6)	1(3,4)	
Mother's Education Level			0,084*
High education	48(98)	1(2)	
Basic education	9(81,8)	2(18,2)	
Children's Nutrition Status			0,115*
Good	46(97,9)	1(2,1)	
Not Good	11(84,6)	2(15,4)	
Birth Weight			0,810
Normally birth weight	53(94,6)	3(5,4)	
Under Normally birth weight	4(100)	0(0)	
Prematurity History			0,950
Not Prematur	56(94,9)	3(5,1)	
Prematur	1(100)	0(0)	

The results of multivariate analysis showed that the level of maternal education and nutritional status of each related to child development was indicated $p > 0.05$. The OR (odd ratio) variable of mother's education level is 0.77. These results indicate that toddlers with low-educated mothers have a 0.077-fold risk of developing developmental problems. While the OR (odd ratio) variable of the nutritional status level of children is 0.98. These results indicate that toddlers who have undernourished nutritional status have a 0.098-fold risk of developing developmental problems

Table 5: Multivariate Analysis of Factors Associated with the Development of Toddler

Variables	p value	Exp(B)	IK 95%	
			Min	Max
Mother's Education Level	0,017	0,077	0,009	0,643
Children's Nutrition Status	0,032	0,098	0,012	0,820

DISCUSSION

RELATIONSHIP OF MOTHER'S EDUCATION LEVEL WITH TODDLER'S DEVELOPMENT

The results showed that the majority of maternal education was high. The bivariate analysis showed that the mother's educational level was related to the development of toddler. The results of multivariate analysis showed that maternal education level was related to the development of toddler ($p < 0.05$). Toddlers with low-educated mothers have a 0.077-fold risk of developing developmental problems. Previous research conducted by Santri, Indriansari, Girsang (2014) concluded that parental education is related to toddler age (1-3 years). There is a relationship between maternal education and children's fine motor development (Kusumaningtyas and Wayanti, 2016). When mothers stimulate development, there is a need for knowledge that must be possessed by mothers. Research by Herlina (2014) concludes that there is a relationship between the level of mother's education and knowledge of children's motor development. The role of mothers in the development of children is needed to achieve optimal development so that good knowledge must be owned by a mother.

This knowledge is obtained from the mother of information that has been obtained both from formal education and from other information media. The higher level of education the mother will be easier to receive and process information from outside including how to care for children well and how to provide stimulation or stimulation so that optimal child development (Kusumaningtyas and Wayanti, 2016).

Mother's education is the strongest factor related to children's health, behavioral and cognitive development (Harding, Morris, and Hughes, 2015). Education is an important predictor of developmental resources in the family because education can shape a child's cognitive development by building a good family life, including income, family structure

and mental health of parents (Jackson, Kiernan, McLanahan, 2019).

RELATIONSHIP OF NUTRITIONAL STATUS WITH TODDLER'S DEVELOPMENT

Nutritional status assessment in this study uses the z score calculation and is classified into 2 categories, good nutrition if the value is in the range of -2 to +2 while malnutrition if the value is in the range of -3 to -2. The results of univariate analysis showed that most children had good nutritional status (78.3%). Most of the children who have good nutritional status have development in accordance with the stages of age (normal) (97.6%). Previous studies conducted by Agarwal et al (2018) reported that most children who had good nutritional status did not experience developmental delays. Other research that is in line with this research conducted by Suharyanti, Hastuti & Triredjeki (2017) shows that most children with good nutritional status, most have appropriate development.

Multivariate analysis results showed that the nutritional status of children associated with child development ($p < 0.05$). Toddlers who have less nutritional status have a 0.098-fold risk of developing developmental problems. Previous studies have reported a positive relationship between the nutritional status of children with the status of child development. Malnourished children have a 2.508-fold risk of delayed development (Agarwal et al., 2018).

Nutritional status of children has an impact on certain domains of child development, namely hearing ability, language and social interaction. Children with malnutrition are three times more likely to experience hearing delays and language skills and five times the risk of experiencing delays in the domain of social interaction compared to children with good nutritional status (Jimoh, Anyiam, Yakubu, 2018)

Good nutrition shows that the nutrients needed by children are fulfilled. Nutrition is very important for child development. Nutrition plays an important role in children's brain development from conception to age 3 years (Cusick & Georgieff, 2017). Adequate nutrition during pregnancy and the two years of early life of a child is needed for brain development as a basis for cognitive development, emotional motor skills and social throughout the childhood to adulthood. Children with impaired or late development of skills during early life are at risk of causing neuropsychological disorders in the future, dropping out of school and low work skills (UNICEF, 2014).

LIMITATION

The process of collecting data on child development must be done several times because there are some children who refuse to be assessed development.

CONCLUSION

The study showed the level of mother's education and nutritional status of children one of the factors associated with influenced the development in toddler, which needs particular attention by the health stakeholders.

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CONFLICT OF INTEREST

The authors declare no conflict of interest with respect to the research, authorship, and/or publication of this article.

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