

## Article

# Relationship between Toddler Nutrition Status and Development of Toddler age 12-36 months

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## A B S T R A C T

National development is essentially human development as a whole which must start as early as possible, namely from the womb and during infancy. The growth and development of infants and toddlers take place through certain patterns. The first three years from birth are a period in which billions of Glial cells continue to grow to fertilize neurons. Little one's head, but for the fact that the first three years of little one's development are golden periods in the formation of his smart brain. Because the brain grows very rapidly and will reach 70-80% in the first 3 years of your child's life. Based on the nutritional status of children under five (weight/age) in Sragen regency in 2011 there were 84.03% normal nutrition, 1.89% undernutrition, and 0.01% poor nutrition Preliminary study conducted in NglanakKwangen village, GemolongSragen, namely there are 55 toddlers, there are 4 toddlers who experience developmental disorders. Speech and language disorders of 2 toddlers and 1 toddler with gross motor impairment are toddlers aged 12 months who cannot sit alone without assistance.

## I. INTRODUCTION

National development is essentially human development as a whole. Efforts to build a complete human being must begin as early as possible, ie since the human was still in the womb and during his toddler years. Early childhood health development, from the womb until the age of five, is shown to protect children from the threat of death and illness that can bring disability and to foster, equip and enlarge their potential to become strong people according to the child's potential. (Depkes RI, 2006)

The growth and development of infants and toddlers take place through certain patterns. Variation in development is indeed quite extensive, but it is limited to the speed of development, not in the pattern or sequence of development. (Sastroasmoro S, 2007). Development is the increase in the structure and function of the body which is more complex

in the ability to rough motion, smooth motion, speech and language as well as socialization and independence. (Depkes RI, 2010)

The most vulnerable age is toddlers because at that time children are easily bored and malnourished easily. Besides that, toddlers are the foundation for forming a child's personality. The first three years from birth are a period in which billions of Glial cells continue to grow to fertilize neurons. These nerve cells can form thousands of connections between neurons called dendrites shaped like spider webs and elongated axons. For the record, our children are born with 10 billion neurons (nerve cells) in the brain. Not about the number of neurons in the baby's head, but the fact that the first three years of the development of the child are a golden period in the formation of the smart brain. Because the brain grows very rapidly and will reach 70-80% in the first 3 years of your child's life. Providing the proper stimulation to the baby's brain at that time will help your child maintain the connection of neurons that have formed when the elimination process occurs at the age of 11 years. (Adriana, 2011) Child development is held on a regular, interrelated and continuous basis starting from conception to adulthood with its periods. (Depkes RI, 2010)

Nationally, under-five malnutrition children were 4.9% and 17.9% malnourished. The highest was in Gorontalo province and the lowest was in the Special Province of Yogyakarta. Based on the nutritional status of children under five (weight /ages) in Sragen regency in 2011 there were 84.03% normal nutrition, 1.89% undernourished and 0.01% poor nutrition (Christine, 2011)

## II. METHODS

This type of research used quantitative, analytic correlations with cross-sectional research designs. The study was conducted in the village of NglanakKwangenGemolongSragen. The number of samples was 55 toddlers aged 12-36 months.

## III. RESULT

### A. Toddler nutritional status

**Table 1 Frequency distribution of nutritional status of children aged 12-36 months in NglanakKwangen Village GemolongSragen.**

<b>Nutrition status</b>	<b>Frequency</b>	<b>Perenrtage (%)</b>
Very thin	3	5.45%
Thin	12	21.82%
Normal	35	63.63%
Fat	5	9.1%
Total	55	100%

Table 1 shows that the majority of respondents have Normal nutritional status of 35 toddlers (63.63%)and respondents with thin nutritional status as many as 12 toddlers (12.82%).

## B. Toddler development

**Table 2 Distribution of frequency of development of toddlers aged 12-36 months in NglanakKwangen Village GemolongSragen.**

<b>Toddler Development</b>	<b>Frequency</b>	<b>Percenttage (%)</b>
There are Deviations	6	10.92 %
Doubt	12	21.81%
Corresponding stage of Development	37	67.27%
Total	55	100 %

Table 2 shows that the majority of respondents had development according to the stage of development of 37 toddlers (67.27%) and doubted as much as 12 toddlers (21.81%).

## C. Relationship of Nutrition Status with the development of toddlers

**Table 3 Frequency distribution of nutritional status with the development of toddlers aged 12-36 months in NglanakKwangen Village GemolongSragen.**

No	Toddler Nutrition Weight / Age	Toddler development								P-value
		Corresponding		Doubting		Deviations		Total		
		F	%	F	%	F	%	F	%	
1	Fat	2	3.63	3	5.45	0	0	5	9.1	0.003
2	Normal	30	54.54	5	9.09	0	0	35	63.63	
3	Thin	5	9.09	4	7.27	3	5.45	12	21.82	
4	Very Thin	0	0	0	0	3	5.45	3	5.45	
Total		37	67.27	12	21.81	6	10.92	55	100	

Rank Spearman correlation test results obtained p-value = 0.003. This shows that  $H_a$  is accepted and  $H_o$  has rejected means that there is a relationship of nutritional status with the development of toddlers in Nglanak Kwangen Village Gemolong Sragen.

#### IV. DISCUSSION

Research conducted showed 12 toddlers with underweight nutritional status with 5 toddlers had appropriate development, 4 toddlers with doubtful development and 3 toddlers experiencing deviations, besides that also found 3 toddlers with very thin nutrition had developmental delays, Moehji (2008) said the relationship between growing brain development and the level of intelligence and nutritional state of children at an early age of life. To sufferers from malnutrition or poor nutrition, there have been obstacles to brain growth, and the level of intelligence. The brain is a perfect structure and function of the body's tissue, but the working power of the brain and its fitness is greatly influenced by the adequate supply of nutrients needed for its various brain functions.

The results of this study are in line with research conducted by Proboningsih (2012) in children aged 12-18 months in the Puskesmas working area of Sidoarjo, with a good nutritional status group with 78.6% having normal development and 21.4% stunted development. Whereas in the malnutrition group there were 53.6% had normal development and 46.4% stunted progress. This shows that normal nutritional status and poor nutritional status have developmental differences (gross motoric, fine motoric, language, and personality). And according to research conducted by Sylvia (2010), weight/age and height/age index have a relationship to gross motor development, meaning that the better the nutritional status of toddlers, the better the gross motor development.

In addition to nutritional factors, development is also influenced by other postnatal factors as stated by Tanuwidjaya (2007) including chronic diseases / congenital disorders with children having chronic diseases such as tuberculosis, digestive disorders, anemia and congenital heart defects that will experience physical growth retardation so that development is disrupted. Besides, children's development is also influenced by the physical and chemical environment in which children live, poor environmental sanitation, lack of sunlight, exposure to radioactive rays, certain chemicals or pollution harm children's growth and development.

#### V. CONCLUSION

There is a relationship between Nutritional Status with the development of toddlers can be seen from the results of the value of  $p\text{-value} = 0.003$  means  $H_a$  is accepted and  $H_o$  is rejected, this shows the relationship between nutritional status with the development of toddlers aged 12-36 months in NglanakKwangen Village, Gemolong Sragen

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