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NUTRITIONAL STATUS AND ITS ASSOCIATION WITH THE DEVELOPMENT OF TODDLER IN THE WORKING AREA OF PUSKESMAS BLANG KUTA, PIDIE JAYA

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Abstract

Introduction: Toddlerhood is a very important period of life and needs serious attention. At this time, a very rapid growth and development process occurs, such as physical growth and psychomotor, mental and social development. One of the important factors that affect the growth and development of toddlers is nutritional status. Malnutrition in children will have an impact on faltering growth, susceptibility to infection and child development hindrance.

Method: This study was conducted using an analytical survey with a cross sectional approach in the working area of Puskesmas Blang Kuta Pidie Jaya from January to February 2019. The sample used in this study were children from the age of 1 to 5 years in Puskesmas Blang Kuta Pidie Jaya working area who met the inclusion criteria with a total sample of 85 toddlers. As the multistage sampling technique was used which consisting of purposive sampling, stratified random sampling, and accidental sampling.

Result: There were 77 toddlers with good nutritional status (90.6%), and 8 toddlers with poor nutritional status (9.4%). Appropriate development of toddlers has a total number of 12 toddlers (14.1%), dubious with 24 toddlers (28.2%) and deviation with 49 toddlers (57.7%). Kendall-Tau test showed 0.227.

Conclusion: There was no association between nutritional status and the development of toddlers from the age of 1 to 5 years in the working area of Puskesmas Blang Kuta. Health care workers were expected to do growth and development monitoring on a regular basis.

Keywords: Toddlers, Nutritional Status, Development

Introduction

The worldwide mortality rate for children under 5 years has declined from 12.6 million in 1990 to 5.4 million in 2017. Half of the deaths occur in sub-Saharan Africa, and another 30% in South Asia. Most children under 5 die from preventable or treatable causes such as complications during birth, pneumonia, diarrhea, neonatal sepsis, and malaria.[1] According to the Indonesian Demographic and Health Survey 2012 (Indonesia Demographic and Health Survey), the Infant mortality rate in Indonesia was 32/1000 live births, and the toddler mortality rate was 44/1000 live births. Meanwhile, the toddler mortality rate in Aceh in 2016 was 12 per 1,000 live births. Based on the Health Profile of Pidie Jaya, infant deaths were found to be the most cases of toddler mortality, which were 40 cases and 1 case of toddler mortality. This showed that 99% of under-five mortality was infant.

According to the Indonesia basic health survey 2013, 3.4% of toddlers suffer from malnutrition and 14.4% are suffering from nutrition deficiency.[2] Toddlers nutritional status monitoring in the district of Pidie Jaya was carried out routinely at the Integrated healthcare center in the village (posyandu) every month. Toddlers who were weighed in

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2015 were 10,574 and 1% or 110 of them were under the red line (malnutrition). They were 56 boys and 54 girls. In 2015, there were 7 malnutrition in Pidie Jaya and all of them have received treatment. [4] Between 2015-2017, the result of nutritional status monitoring in Aceh province showed that there was a gradual decline in the prevalence of underweight toddlers. When compared to the national average the prevalence of toddler underweight (6.9%), the prevalence in Aceh province higher (12.8%), was almost twice the National Prevalence. An increase in cases occurred in the district of Pidie Jaya, there was a significant increase in cases (8.1%) for underweight problems (poor and deficient) and this increase in cases occurred in almost all districts/cities in Aceh except for Langsa and Nagan Raya.[5]

Toddlerhood is a very important period of life and needs serious attention. A very rapid process of growth and development occurs during this period of time, such as physical growth and psychomotor, mental and social development. The nutritional factor is one of the most important factors that affect child development. Malnutrition in children will have an impact on faltering growth and susceptibility to infection and ultimately hinder child development. Therefore, children need to acquire nutrition in the right amount and good quality from their daily food intake.[6] The results of a study conducted in 2016 stated that there was a positive and significant association between nutritional status and child development from the age of 1-5 years. Nutrition plays a very important part in child growth and development because one of the factors that influence child development is biological factors, one of which is nutrition.[6]

Nutrition is a process of using food that is normally consumed by an organism through the processes of digestion, absorption, transportation, storage, metabolism and excretion of unused substances to maintain life, growth and normal function of organs, and produce energy.[7] Toddlers who suffer from malnutrition will show clinical signs such as looking thin. Malnutrition can lead to child development hindrance and also organs and body systems problems.[8]

Development is a change that is progressive, directed, and integrated. Progressive means that the changes that occur have a certain direction and tend to move forward, not backwards. Directed and integrated shows that there is a definite association between the changes that occur in the present, previous and next. A critical period of child development needs attention. One of the basic needs of children to grow and develop is biomedical physical needs where food/nutrition is the most important one.[9] The objective of this study was to determine the association between toddler nutritional status in the working area of Puskesmas Blang Kuta, the district of Pidie Jaya.

Method

This study was conducted using an analytical survey with a cross-sectional approach in the working area of Puskesmas Blang Kuta, from January to February 2019. The population of this study was all toddlers in the working area of Puskesmas Blang Kuta, the district of Pidie Jaya. The sample in this study were children from the age of 1 to 5 years who met the inclusion criteria which classified as children aged 1 to 5 years, had a mother and child health book or health card for a child, attended in posyandu, and agreed for participating in this study. The exclusion criteria were: children who had been sick in the last 3 months, had a history of being hospitalized, had congenital defects, low birth weight infants or premature history, had a delivery by vacuum extraction, and had asphyxia history.

As the multistage sampling technique was used which consisted of purposive sampling, stratified random sampling, and accidental sampling. The primary data of this study consisted of data on nutritional status values obtained through weight measurement and developmental values obtained through filling out the respondent's developmental pre-screening questionnaire. Secondary data of this study was the number of toddlers in the working area of Puskesmas Blang Kuta. The instrument used in this study is a questionnaire. The questionnaire consisted of 9-10 statements about the developmental abilities that have been

achieved by children consisting of rough motion, smooth motion, socialization, and independence as well as speaking and language. Data analysis used the Kendall Tau correlation test (τ) with the SPSS 24 for the windows program.

Results

a. Gender-related characteristics of respondents

The results showed that most of the toddlers were boys, amounting to 48 toddlers (56,5%). There were 28 toddlers (33%) who were in the 25-36 month age category. There were 77 toddlers (90,6%) who had normal nutritional status. There were 49 toddlers (5,7%) who had developmental deviation (table 1).

Table. 1 Frequency distribution of age-related characteristics of respondents in working area of Puskesmas Blang Kuta , Pidie Jaya

Variable	n	%
Gender		
Boy	48	56,5
Girl	37	43,5
Age		
12-24 months	24	28,2
25-36 months	28	33
37-48 months	18	21,2
49-50 months	2	2,4
51-62 months	13	15,2
Nutritional Status		
Malnutrition	0	0
Deficient	8	9,4
Normal	77	90,6
Overweight	0	0
Toddler Development		
Appropriate	12	14,1
Dubious	24	28,2
Deviation	49	57,7

a. Association between Nutritional status and Toddler Development

The results showed that from 77 children with normal nutritional status there were 43 children (55,8%) who experienced developmental deviations, and the results of the Kendall tau correlation test showed that the P-value was 0.227 (ρ> 0.05) (table 2).

Table 2. Association between Nutritional status and Toddler Development

Nutritional Status	Toddler Development						Total		*p-value*
	Appropriate		Dubious		Deviation				
	n	%	n	%	n	%	n	%	
Good	12	15,6	22	28,6	43	55,8	77	100	**0,227**
Deficient	0	0	2	25	6	75	8	100	

Discussion

According to the study conducted in the Puskesmas Blang Kuta Pidie Jaya working area, it was found that out of 77 children who had good nutritional status, there were 15.6% (12 children) with appropriate development and 55.8% (43 children) with developmental deviations. Likewise, out of 8 children who had malnutrition, there were 75% (6 children) suffered from developmental deviations and 25% (2 children) with dubious development.

The results of data analysis showed that there was no association between nutritional status and toddler development in Puskesmas Blang Kuta Pidie Jaya in 2019 =0.227(ρ>0.05).

The result of this study was in line with the one conducted on children under five aged 3-5 years at Puskesmas Purwantoro Iwonogiri in 2011, which showed that there was no significant association between nutritional status and the development of children aged 3-5 years =0.932 (ρ>0, 05).[23] Nutritional status is a state of the body as a result of food consumption and the use of nutrients, where nutrients are needed by the body as a source of energy, growth, maintenance of body tissues, and regulators of body processes. According to a previous study, some parents who had children with malnutritional status, stated several causes of malnutrition, including children who had difficulty eating and only ate foods they like such as instant noodles, eggs, and street snacks. It is best to avoid the habit of consuming junk food or foods that contain lots of preservatives, artificial sweeteners, artificial coloring, and other harmful chemicals, because the consumption of unhealthy foods is bad for the body, especially for toddlers. Although these types of food are widely circulated in the market and advertised in the mass media as nutrient-rich food, they are not in accordance with the adequacy of the nutritional requirements needed by the body. Nutritional intake that is less than needed causes the body to become thin and susceptible to disease.[23.]

Another study that was conducted on children aged 0-3 years in Kejayaan Sub-District, Pasuruan District in 2007, showed that a child's need for growth depended on the fulfillment of physical and biological needs, such as the need for food and drink. The fulfillment of this need will run smoothly if there is active help from parents. Children who get adequate nutrition from their parents and have good and balanced nutritional value will be able to grow well. [24]

The results of the study on children who had appropriate development were 14.1% (12 children) of 85 children, but there were still 57.7% (49 children) experiencing developmental deviations. Development is the result of the interaction of the maturity of the central nervous system with the organs it affects. Normally, the pattern of growth and development between children is different from one another, because it is influenced by many factors. [23] This study also showed that 55.8% (43 children) with good nutritional status experienced developmental deviations and 75. % (6 children) who had developmental deviations. This situation was triggered by several factors including internal factors including genetics where the basic capital in achieving the final process of child growth and development and external factors including environmental factors are broadly divided into environments that affect children while they are still in the womb (prenatal factors) and environmental factors that affect the child. affect the growth and development of children after birth (postnatal factors).[9]

Development is an increase in the ability (*skills*) of more complex body structures and functions, in a regular and predictable pattern as a result of the maturation process. Child development includes physical, emotional, language, motor (rough and smooth) development, personal social, and adaptive. One of the tools used to assess child development is the KPSP, where the interpretation of the assessment results is categorized into appropriate, dubious and deviation categories[6]. This study result showed that parenting was one of main factors that affected the development of children. Children who were raised by their own parents would create interactions between children and parents which affected good physical and mental development for children. Child development is a psychophysical change resulting from the process of maturation of the child's psychological and physical functions supported by environmental factors. There are two factors that can affect a child's growth and development, which consists of internal factors and external factors.

The socialization ability of a child is influenced by environmental factors, especially by the family, which consists of the role and involvement of parents which is reflected in the implementation of parenting. A child who gets stimulation, acceptance and warmth from his father, mother and grandmother or grandfather

will have a positive effect on the child's social development. When the home environment as a whole fosters and develops good social attitudes, it is likely that it will become a social person who will influence the child's socialization skills both within the family and outside the family.

According to researchers, social skills were indicated by the response of children who were able to behave positively and cooperatively towards other people and their environment. When the observer performed an action such as inviting children to play together, many children wanted to interact with their peers. Socialization ability is influenced by family and environmental factors. Parents, as people who understand the most about the child's condition, are expected to provide support to children, especially in terms of socialization skills which will be very useful for the future and the environment, so that all children may have good socialization skills.

Stimulation is important in child development. Children who receive directed and regular stimulation will develop faster than children who receive less or no stimulation. A stimulating environment is one of the factors driving children's development. A stimulating environment encourages good physical and mental development, while a non-stimulating environment causes children's development to be below their abilities. Giving stimulation to early childhood will be more effective if we pay attention to the needs of children according to their development stage.[25] This Study found out that nutrition has an effect on child development, but environmental factors and parenting patterns also have an important influence on the process of optimal child development. Although there is a possibility of the influence of genetics, hormones, and the child's health status.

Conclusion

The nutritional status of toddlers is not associated with the development of toddlers in Puskesmas Blang Kuta Pidie Jaya Working area.

Conflict of Interest None declared

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Authors' Contribution

a. Concept & Research Question: Intan Mastura
b. Conducting Research: Intan Mastura
c. Statistical Analysis: Intan Mastura, Nurlaili Ramli
d. Report Writing: Intan Mastura, Nurlaila Ramadhan

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