

Study Investigation The Risk Factors of Toddlers with Low Nutritional Status in The North Coast of Java, Indonesia

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ABSTRACT

Today, one of the problems in the world that is never finished was low nutritional status. Toddlers nutritional are the measure of the success nutritional status. The development of toddlers can be seen from their nutritional status, whether nutritional intake is in accordance with needs or not. Every toddler has a different nutritional status depending on the nutritional intake received every day. Nutrition monitoring in toddlers can be done regularly through Posyandu or pediatricians. The risk of low nutritional status in children is caused by several factors, including internal factors and other external factors. According to UNICEF in 2020 estimates that 45.4 million of toddlers are acutely malnutrition. In 2021 the incidence of low nutrition status with stunting in Indonesia is 24.4%, East Java Province is 23.5% and Probolinggo Regency is 23.3%. This study used a descriptive analytic method with a cross sectional approach. The sample used in this study was 63 mothers who had toddlers. This study uses a questionnaire distributed to all respondents via google form then the data is processed to determine the dominant factors that influence the incidence of stunting in toddler. The results of a multivariate test of all the variables that most dominantly affect stunting, the strength of the relationship from the largest to the smallest. are: body weight (OR=83,664), diet (OR=15728), height (OR=8,977) and breast feeding (OR=0,832). Exclusive breastfeeding is highly recommended because it is very beneficial for the child's growth and development. Breast milk contains various substances that are beneficial for the body. Therefore, it is important for mothers to give breast milk to newborns to prevent babies from various diseases and for good brain growth .

Keyword: Stunting, Nutritional Status, Toddler, Risk Factors

ABSTRAK

Saat ini, salah satu permasalahan dunia yang tidak kunjung selesai adalah rendahnya status gizi. Gizi balita merupakan tolak ukur keberhasilan status gizi. Perkembangan balita dapat dilihat dari status gizinya, apakah asupan gizinya sudah sesuai dengan kebutuhan atau belum. Setiap balita mempunyai status gizi yang berbeda-beda tergantung dari asupan gizi yang diterima setiap harinya. Pemantauan gizi pada balita dapat dilakukan secara rutin melalui Posyandu atau dokter spesialis anak. Risiko rendahnya status gizi pada anak disebabkan oleh beberapa faktor, antara lain faktor internal dan faktor eksternal lainnya. Menurut data UNICEF pada tahun 2020 diperkirakan 45,4 juta balita mengalami gizi buruk akut. Pada tahun 2021 angka kejadian status gizi rendah disertai stunting di Indonesia sebesar 24,4%, Provinsi Jawa Timur sebesar 23,5% dan Kabupaten Probolinggo sebesar 23,3%. Penelitian ini menggunakan metode deskriptif analitik dengan pendekatan cross sectional. Sampel yang digunakan dalam penelitian ini adalah 63 ibu yang mempunyai balita. Penelitian ini menggunakan kuesioner yang dibagikan kepada seluruh responden melalui google form kemudian data tersebut diolah untuk mengetahui faktor dominan yang mempengaruhi kejadian stunting pada balita. Hasil uji multivariat seluruh variabel yang paling dominan mempengaruhi stunting, kekuatan hubungannya dari yang terbesar hingga yang terkecil. yaitu: berat badan (OR=83,664), pola makan (OR=15728), tinggi badan (OR=8,977) dan pemberian ASI (OR=0,832). Pemberian ASI eksklusif sangat dianjurkan karena sangat bermanfaat bagi tumbuh kembang anak saat ini.

Kata Kunci: Stunting, Status Nutrisi, Balita, Faktor Risiko

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Introduction:

Nutritional status is a measure of success to meet nutritional status in children by showing it through the achievement of body weight for age. Until adulthood, the impact of malnutrition on children is still felt and it is difficult to intervene. In 2020 the prevalence of malnutrition is still at 45.4 million children in the world who experience malnutrition. Meanwhile, the prevalence of malnutrition in Indonesia in 2021 is still around 24.4% (SSGI, 2021), while in East Java it is 23.5% and in Probolinggo Regency it is still 23.3%. Until now, the target for reducing the malnutrition status of toddlers has not been significant and has become unfinished world problem.

Three factors of nutritional status that need to be monitored based on WHO are children's age, height and weight. The indicator of age for nutritional status is body weight because weight is positively correlated with age and height (Kementerian Kesehatan RI, 2020). Based on the WHO four categories of nutritional status in children, namely stunting, wasting, overweight, severe acute malnutrition. Toddler period is a critical period in the formation of a child's physical and psychological capacity. The nutritional status of toddlers is very significant to be used as a physical measurement point in adulthood. The character of the system and the body's resistance is formed from the maturity and quality of the body's organs. Optimal health can be achieved from an early age to adulthood, so a mother needs to know the factors that can affect the incidence of nutritional decreased of toddlers (Kementerian Kesehatan RI, 2020). The factors that have the most significant influence on the nutritional status of toddlers can be studied and then later formulated an intervention that can be used as the best intervention for the community in the incidence of malnutrition for children (Septikasari, 2018).

Inadequate nutritional intake in toddlers will directly affect the decline in nutritional status while indirectly caused by infectious diseases. The level of growth and development affects nutritional status starting from the time of conception until the child is two years old, which is called the period of the first thousand days of

life. The decline in nutritional status at this time will be permanent and long term (Sulistiyawati, 2019). Assessment of toddler's nutritional status can be measured based on anthropometric measurements consisting of age, weight and height variables. Age plays a very important role in determining nutritional status, incorrect determination will lead to incorrect interpretation of nutritional status. Accurate weight and height weighing results are meaningless if they are not accompanied by an appropriate age determination. The provisions used in the calculation of age are 1 year is 12 months, 1 month is 30 days so that the calculation of age is in full months which means the remaining age in days is not taken into account (S. Silalahi et al., 2023).

Based on theoretical concepts, body weight can be defined as a collection of tissue, muscle mass and body fluids. Body weight can change because it is influenced by certain factors such as infectious diseases or food consumption. While height describes the function of the child's growth and development, where height is also used as an indicator of the nutritional condition of the child, whether malnourished or low birth weight at birth (Purba et al., 2019). Coastal communities live in coastal areas, most of whom work as fishermen. This condition of course has different characteristics from non-coastal communities. The things that distinguish these characteristics are the economic level of the region, culture, the availability of supporting infrastructure and health problems that often occur. Most coastal communities adapt to the use of technology to process natural resources in the surrounding environment, for example, most coastal communities work as fishermen in their daily lives trying to process the fish they catch using various technologies that have been developed and then process them to serve as the main menu of food for their families (Harahap et al., 2021).

Based on the proposition above, it has become the main step to inform the factors that cause the decline in nutritional status in toddler in the northern coastal area of the island of Java. This can be achieved by digging up information related to the factors that cause a decrease in nutritional status in toddler which can later

become an independent study for families living in the northern coastal areas of Java Island and can be a comprehensive recommendation to help families, especially the poor. Parents in improving the nutritional status of toddler in the future, and encouraging the community to always be positive and instill patience to improve nutrition, especially in the north coast.

Methods:

This study used a descriptive analytic method with a cross sectional approach. The population in this study was 81 mothers who had toddlers, the sample obtained according to the inclusion criteria was 63 respondents. The inclusion criteria was mother who had toddlers, live in coastal area of Java Island, can writing and reading and have a smartphone. This study uses a questionnaire that was adopted and developed from previous research (Kholifah, 2016) and distributed using google forms which were distributed to parents, especially mothers with the help of health workers and health cadres. The questionnaire contains the availability of respondents and the statement is placed on the top page of the questionnaire. Respondents answered questions posed via their smartphones. The questionnaire that was filled out by respondents consisted of two parts, where the first part was the basic data consisting of maternal age, last education, occupation and family income in one month. The second part consists of the child's weight, height and eating patterns with a balanced or unbalanced menu, as well as exclusive breastfeeding for children.

To ensure that the data is filled in by respondents, researchers and cadres accompany them in filling out the questionnaire, this makes it easier for respondents to answer questions. Data collection was carried out from February 15, 2022 to March 15, 2022. The study's ethical permission has been granted by a related local official ethical board commission from Hafshawaty School of Nursing with number: KEPK/215/STIKes-HPZH/VI/2023.

Results:

Table 1. shows the respondents characteristic, the mother's age are 20-30 years

old (79.4%). Mother's education is mostly secondary school (76.1%). The majority of mothers who became respondents (76.2%) were housewives, with a family income (54%) of less than 1 million rupiah. Table 2. shows the respondents characteristic, that most of toddler with the appropriate weight (65.1%), the child's height (63.5%) with the height appropriate to the child's age, and 63.5 % of toddler by consuming a balanced diet.

Table 1. Respondent Characteristics (f=63)

Variabel	f	%
Age		
>20 years	11	17.5
20 – 30 years	50	79.4
>30 years	2	3.2
Education		
Higher Education	15	23.8
Middle Education	48	76.1
Accupation		
Work	15	23.8
Housewife	48	76.2
Income		
< 1 million rupiah	34	54
>1 million rupiah	29	46

Table 2. Respondent Characteristics (f=63)

Variabel	f	%
Weight		
Normal Weight	41	65,1
Abnormal Weight	22	34,9
Height		
Normal Height	40	63,5
Abnormal Height	23	36,5
Food Diet		
Balanced diet	40	63,5
Unbalanced diet	23	36,5

Table 3. Bivariat Test Of The Risk Factors For Decreased Nutritional Status In Children Age 1-5 Years

Variable	Coefficient	p-value	OR (IK 95%)
Weight	4,427	0,000	83,664
Height	2,195	0,021	8,977

Diet Food	2,755	0,018	15,728
Breast Feeding	0,184	0,864	0,832

Table 3, an investigative study of risk factors for children under five with low nutritional status in toddler in the coastal area of the northern coast of Java shows the results of a multivariate test of all the variables that most dominantly affect stunting, the strength of the relationship from the largest to the smallest are: body weight (OR=83,664), diet (OR=15728), height (OR=8,977) and breast feeding (OR=0,832).

Discussion:

Weight is a risk factor for undernutrition in toddler with a p-value of $0.000 < 0.005$, weight gain is closely related to socioeconomic status which is the most decisive factor on the type and food to be consumed. If a family has a low socioeconomic status, it will result in limitations in buying food ingredients, causing food consumption to decrease which results in changes in the child's weight and in the end can experience malnutrition. On the other hand, if the family has a good income level so that they are able to buy food ingredients, and nutrients and vitamins that can be fulfilled properly, this is in accordance with the results obtained where many children under five are malnourished with families with low socioeconomic status compared to other children. with families with good socioeconomic status. This is in line with research conducted by Kholifah, (2016) for families with low social status with less nutrition (Faradila, 2020). Many children under five with families with low socioeconomic status experience malnutrition. Growth is an increase in physical size, either in whole or in part that can be measured (Sarwono, 2017). In the growth of the pre-school period in a child, physical growth, especially in weight gain, has an average increase of 2 kilograms per year, looks thin but has high motor activity, where the body system has reached maturity such as walking, jumping and others (R. D. Silalahi, 2020).

The p value for height is 0.021 with OR = 8.977 which is in line with previous research

where the p value is $0.003 < 0.005$ which states that there are some students who have a height above normal which is not in accordance with generally (R. D. Silalahi, 2020). There are several ways of measuring child growth through: anthropometric measurements that can be done by measuring weight, children's height (body length), children's head circumference and children's upper arm circumference (Sormin & Siagian, 2022).

The process of physical growth there are changes in size and maturation of functions that start from the molecular stage which is simply at the beginning of the womb, from childhood to adolescence with increasingly complicated processes. The process of growth and development follows a certain pattern that is unique to each child in terms of growth and development of the body, organs and tissues. But there is one of the most important factors, namely environmental factors where there is sufficient food containing nutrients for the growth process (Abadi et al., 2020).

Provision of dietary intake of food is one of the risk factors for malnutrition in toddler with the significance of p value of $0.018 < 0.005$ and an OR value of (15.728) in line with previous research on providing interventions in the form of foods that are high in protein, Zinc with statistical test results obtained $p < \alpha$ so that it can be concluded that there is a difference in the average Z-score before and after the intervention (Martony et al., 2020). The other research show that has been done where elementary school children experienced an average increase of body height of 0.54 cm when given tempe nuggets with fish substitution for 1 month (Lestari et al., 2016).

With the research obtained, it proves that additional food in the form of a good diet which contains high protein, calcium and zinc will increase height and weight in children who experience stunting, although it is likely not only caused by the provision of a good diet but the other factors like the main food consumption and the level of knowledge of the mother which also supports the provision of dietary food for children. In accordance with research, it was found that breastfeeding is also a risk factor for undernourished children under five and previous

studies where more people suffer from malnutrition who do not get exclusive breastfeeding (Faradila, 2020). This study is also in line with previous research which stated that exclusive breastfeeding had an effect on a certain age, namely 0-6 months, such as research conducted by Safitri et al., (2020) which stated that the risk of stunting is 3.7 times higher in infants who are not exclusively breastfed (Sutriana & Umar, 2020). Breastfeeding that is not in accordance with the needs will affect the growth and development of children. Breastfeeding in accordance with the body's needs can maintain a child's nutritional balance properly, so that the child's growth and development will be optimal according to their age. Therefore, exclusive breastfeeding is very important to be given to children by a mother so that the nutrition and growth and development of the baby is achieved.

Healthy breast milk contains colostrum which is a yellowish liquid that comes out at the beginning of breastfeeding. The colostrum will contain a lot of immunoglobulin A (Ig A) antibodies which function in protecting the lining of the digestive tract so that germs and bacteria that enter the child's body tract and follow the basic flow will provide protection to the baby until the immune system functions properly. In addition, exclusive breastfeeding is highly recommended because breast milk is very beneficial in the process of child development (Simatupang & Meliasari, 2020)

Limitation:

The limitation in this study is that collecting data using an online questionnaire so that the researchers cannot directly observe the actual condition of the respondents.

Conclusions:

Exclusive breastfeeding is highly recommended because it is very beneficial for the child's growth and development. Breast milk contains various substances that are beneficial for the body. Therefore, it is important for mothers to give breast milk to newborns to prevent babies from various diseases and for good brain growth.

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