CHILDREN GROWTH AND DEVELOPMENT OF 18 MONTHS-AGED BABIES: NUTRITIONAL STATUS OVERVIEW FOR EARLY STUNTING SCREENING

PERTUMBUHAN DAN PERKEMBANGAN ANAK BAYI UMUR 18 BULAN: GAMBARAN STATUS GIZI UNTUK SKRINING STUNTING DINI

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ABSTRACT

Problems in toddlers include nutrition that can cause malnutrition and stunting. The prevalence of stunting in Indonesia based on the results of the Nutrition Status Monitoring reached 27.5%, while undernourished was 16.29% and underweight babies reached 7.44%. The privilege case in Rowosari, there are 28 children with stunting in 2022. The purpose of this study was to figure out the description of children growth and development at the Rowosari Health Center Semarang for early stunting detection. This type of research was descriptive with a cross-sectional approach. 35 infants under 18 months of age were assessed for nutritional status and stunting by calculating the Z-score and the education and occupation factors of the mother were also analyzed using the chi-square test. The results showed that 5.7% of infants were malnourished and 20% over-nourished, and 17.1% were short and 2.9% were very short. There is a relationship between nutritional status on stunting with p-value <0.05.

Keywords: growth; nutritional status; stunting

ABSTRAK

Masalah pada balita antara lain gizi yang dapat menyebabkan gizi buruk dan stunting. Prevalensi stunting di Indonesia berdasarkan hasil Pemantauan Status Gizi mencapai 27.5%, sedangkan gizi kurang 16,29% dan bayi kurus mencapai 7,44%. Kasus keistimewaan di Rowosari, terdapat 28 anak stunting pada tahun 2022. Tujuan penelitian ini adalah untuk mengetahui gambaran tumbuh kembang anak di Puskesmas Rowosari Semarang untuk deteksi dini stunting. Jenis penelitian ini adalah deskriptif dengan pendekatan cross sectional. 35 bayi berusia di bawah 18 bulan dinilai status gizi dan stuntingnya dengan menghitung Z-score serta faktor pendidikan dan pekerjaan ibu juga dianalisis menggunakan uji chi-square. Hasil penelitian menunjukkan bahwa 5,7% bayi mengalami gizi buruk dan 20% gizi lebih, serta 17,1% bayi pendek dan 2,9% bayi sangat pendek. Ada hubungan antara status gizi dengan stunting dengan p-value < 0,05.

Kata kunci: pertumbuhan; status gizi; stunting
INTRODUCTION
Healthy toddlers can grow and develop properly if the need for early stimulation is met. Provision of appropriate early stimulation will allow the formation of good ethics, good personality, intelligence, independence, skills and productivity (Irva, 2014; Kusmiyati, 2013). Malnutrition in children is a global health problem. The ability to meet energy and nutritional needs during this critical stage of development is necessary, not only for achieving physical and mental potential but also for later socio-economic achievements. Optimizing diet patterns to support the achievement of the Sustainable Development Goals set by UNICEF, plays a role in identifying the types of foods that have been effective in reducing the negative impact of malnutrition on young children. Food intake has an impact on body weight.

Problems in toddlers include nutrition that can cause malnutrition and stunting. Stunting (short stature) is a chronic nutritional deficiency problem caused by inadequate nutritional intake and providing food that is not in accordance with nutritional needs for a long time (Fitrah, 2013). Stunting is presented based on growth standards according to the World Health Organization (WHO) with the Z-score formula for height for age less than -2 standard deviations. Stunting sufferers are generally susceptible to disease, have a below normal level of intelligence and low productivity.

The prevalence of stunting in Indonesia based on the results of the 2016 Nutritional Status Monitoring reached 27.5% (Minarti, 2012; Simanjuntak, 2017). Toddler age is an age stage where brain development can occur optimally. Growth factors can be influenced by parenting, nutrition and nutrition, environmental factors, and family stimulation (Kennedy, 2018; De Onis, 2016). Lack of nutrients and nutrients can lead to poor nutritional conditions and the risk of stunting. One of the Sustainable Development Goals (SDGs) targets, namely good health and welfare, includes reducing the stunting rate to 40% by 2025 (Beckmann, 2021).

Stunting in children under three years of age is usually not realized because the difference between stunted children and normal children at that age is not very visible. Age under three years is a golden period in determining the quality of human resources in terms of physical growth and intelligence, so this must be supported by good nutritional status. A child who is malnourished can affect growth in height so that he is at risk of stunting. Pravana, et al (2017) mentioned in their research that The mother’s age at birth, birth interval, socioeconomic status, father’s educational level and initiation of complementary feeding at the age of 6 months were important determinants of Children with severe acute malnutrition (SAM) among children in Nepal.

Stunting conditions are difficult to handle when the child has entered the age of two. Therefore, to prevent stunting in children, mothers need to consume adequate nutritional intake, especially during pregnancy until the child is born and is 18 months old. Child survival and health cannot be separated from maternal health. Low nutrient intake is influenced by parenting, one of which is inappropriate feeding behavior.

Efforts made to reduce the prevalence of stunting include providing preventive, promotive, curative and rehabilitative efforts to at-risk groups such as adolescents, young adults, pregnant & maternity mothers, toddlers and school-age children. Another problem is sleep disturbance in children (Romeo, 2021; Wang, 2020). Factors that affect growth include genetic factors and environmental factors including conditions during prenatal and postnatal. Parameters for assessing physical growth include age, weight, height. Early detection in children can help overcome problems early, including nutritional status and stunting.

Poor nutritional status in children can inhibit the growth and development of children. Children with poor nutrition are at risk for stunting. Handling is needed to improve child nutrition, especially in the period of 1000 days of first birth. The purpose of this study was to describe the nutritional status and stunting of
children aged 0-18 months at the Rowosari Health Center Semarang.

METHOD
This was a quantitative correlation with a cross-sectional approach. It was conducted in the Rowosari Health Center Semarang in August-October 2022. The population of this study were children aged 0-18 months as many as 35 children who met the inclusion and exclusion criteria. The inclusion criteria are mothers and children who are willing to be respondents. This research has passed the ethical test of Karya Husada University Semarang with the number 006/KEP/UNKAHA/SLE/VI/2022. Respondents signed the informant statement. The assessment of Growth and Development used Denver II to analyze the chart of Growth and Development of Children.

RESULTS
Based on table 1, it is explained that the average age of the mother is 29.63 years and the average age of the child is 4.22 months. The majority of mothers are housewives (88.6%) and have high school education (62.9%).

Table 1. Maternal and Child (n=35)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Maternal and Child (n=35)</th>
<th>f (%)</th>
<th>Mean ± SD</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s age (in years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29.63±4.69</td>
<td>22-45</td>
</tr>
<tr>
<td>Child’s age (in month)</td>
<td></td>
<td></td>
<td>4.22±3.63</td>
<td>0-18</td>
</tr>
<tr>
<td>Children sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Male</td>
<td></td>
<td></td>
<td>22 (62.90)</td>
<td></td>
</tr>
<tr>
<td>b. Female</td>
<td></td>
<td></td>
<td>13 (37.10)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Housewife</td>
<td></td>
<td></td>
<td>31 (88.60)</td>
<td></td>
</tr>
<tr>
<td>b. Working Mom</td>
<td></td>
<td></td>
<td>4 (11.40)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Secondary School</td>
<td></td>
<td></td>
<td>6 (17.10)</td>
<td></td>
</tr>
<tr>
<td>b. High School</td>
<td></td>
<td></td>
<td>22 (62.90)</td>
<td></td>
</tr>
<tr>
<td>c. Higher Education</td>
<td></td>
<td></td>
<td>7 (20.00)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows a picture of children’s growth seen from the nutritional status of the PP/U and PB/U Z-score values. There is still poor nutritional status and more and stunting.

Table 2. Growth of Nutritional Status of Children (Frequency and Zscore) (n=35)

<table>
<thead>
<tr>
<th>Growth</th>
<th>f</th>
<th>%</th>
<th>Mean ± SD</th>
<th>(Min-Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight/Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malnourished</td>
<td>2</td>
<td>5,7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well Nourished</td>
<td>26</td>
<td>74,3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over nourished</td>
<td>7</td>
<td>20,0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Height/Age</th>
<th>f</th>
<th>%</th>
<th>Mean ± SD</th>
<th>(Min-Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height/Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Short</td>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>6</td>
<td>17,1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>25</td>
<td>71,4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tall</td>
<td>3</td>
<td>8,6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 explains that there are still children with poor nutritional status (5.7%) and overweight status (20%). Children with short height are 17.1% and very short are 2.9%.

Relationship between nutritional status and stunting
Table 3 shows the relationship between nutritional statuses of body weight/age on stunting. The data explain that nutritional status affects stunting in children.

Table 3. Relationship between Nutritional status of Weight for age to Height/ age (n=35)

<table>
<thead>
<tr>
<th>Weight for Age</th>
<th>Very Short</th>
<th>Short</th>
<th>Normal</th>
<th>Tall</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td></td>
</tr>
<tr>
<td>Malnourished</td>
<td>1 85</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
<td>2 86</td>
<td>5,7 1</td>
</tr>
<tr>
<td>Well nourished</td>
<td>0 0 3 8 5 7</td>
<td>2 62</td>
<td>1 86</td>
<td>2 6</td>
<td>74 29</td>
<td>0,0 13*</td>
</tr>
<tr>
<td>Over nourished</td>
<td>0 0 3 8 5 7</td>
<td>3 8 5 7</td>
<td>1 86</td>
<td>7 20</td>
<td>00 00</td>
<td></td>
</tr>
</tbody>
</table>

Total | 1 85 6 17 2 71 3 8 58 3 10 5 0

*Chi Square
Mothers’ working status for Children Growth and Development

The supplementary data for deep analyzing to support the findings is the characteristics of mother’s working status. In table 4, it shows the relation between nutritional status of children (Growth) and mother’s working status, as stated as below:

Table 4
The relation of Children Growth and Mothers’ working status.

<table>
<thead>
<tr>
<th>Mother’s working status</th>
<th>Malnourished</th>
<th>Well-nourished</th>
<th>Over-nourished</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>1 2.86</td>
<td>24 68.57</td>
<td>6 17.14</td>
<td>31 88.57</td>
<td>0.996*</td>
</tr>
<tr>
<td>Working mother</td>
<td>1 2.86</td>
<td>2 5.71</td>
<td>1 2.86</td>
<td>4 11</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2 5.72</td>
<td>26 74.28</td>
<td>7 20.00</td>
<td>35 100</td>
<td></td>
</tr>
</tbody>
</table>

* Kolomogorov-Smirnov Test

Both children with working mom and housewife status have poor status of nutrition with each 2.86% and most over-nourished children come from the ones with mother as housewife 17.14%.

In the scope of Children development and mother’s working status (table. 5) shows that most of the suspect and untestable is from mother as housewife. The suspects are 6 children (17.14%) and untestable are 2 children (5.71%)

<table>
<thead>
<tr>
<th>Mother’s occupation</th>
<th>Normal</th>
<th>Suspect</th>
<th>Untestable</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>22 85.72</td>
<td>2 17.14</td>
<td>2 5.71</td>
<td>31 88.57</td>
<td></td>
</tr>
<tr>
<td>Working moth</td>
<td>4 11.43</td>
<td>0 0</td>
<td>0 0</td>
<td>4 11.43</td>
<td>0.972*</td>
</tr>
<tr>
<td>Jumlah</td>
<td>27 77.15</td>
<td>6 17.14</td>
<td>2 5.71</td>
<td>35 100</td>
<td></td>
</tr>
</tbody>
</table>

* Kolomogorov-Smirnov Test

DISCUSSION

The development of children under 1 year relies heavily on the mother’s role as the main bonding agent in providing the best care for children. Nutrition is important before and after the child is born, the importance of fulfilling the nutrition of pregnant women is not fully realized that this will also have an impact on the development of the child after birth. The incidence of malnutrition assessed by weight and height can also be influenced by the lack of maternal obedience in fulfilling additional nutrition and supplements. Knowledge of nutritional intake is one of the factors that can affect food consumption and affect the nutritional status of children, as in research (Simanjuntak, 2017).

Good nutrition habitation patterns in the family can affect nutritional patterns in toddlers. If the nutrition habitation pattern is good and carried out appropriately, it will become a habit in fulfilling nutritious menus for toddlers, but if parents do not pay attention to the selection of menus that should be given to toddlers, it can result in child malnutrition. In another study tracing the status of family nutrition awareness on toddler nutrition, Purwaningrum (2012) described his findings in his research, it was found that 58 of 97 respondents had normal (good) nutritional status and 39 respondents had abnormal nutritional status.

The influence of mother’s work is not fully a dominant factor in determining the nutritional status of children, housewives and working mothers are status given because of the label of participation and direct involvement in child care. Pravana, et., al. (2010) mentioned in their research that Mother’s educational level, initiation of breastfeeding, colostrum feeding, and exclusive breastfeeding were not significantly associated with Severe Acute Malnutrition (SAM) in Ethiopia, which is this country is included in Development Country. Pravana emphasizes mother’s age at birth, birth interval, socioeconomic status, father’s educational level and initiation of complementary feeding at the age of 6 months were important determinants of SAM among children. So, they study of nutrition is also important held in moderate severe malnutrition is like in Indonesia that the amount of stunting children is still arose.

REFERENCE


