



Development Of Stunted Toddlers Aged 24-59 Months Using Prescreening Developmental Questionnaire (PDQ) In Air Dingin Public Health Center, Padang 2019: An Overview

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ARTICLE INFORMATION

Received: January, 24, 2020

Revised: April, 17, 2020

Available online: February, 2021

KEYWORDS

development, PDQ, stunting, toddlers

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A B S T R A C T

Stunting is a chronic malnutrition problem that resulted from an insufficient nutritional intake for a long time. This problem can develop during pregnancy, infancy, childhood, and throughout the life cycle due to feeding that does not accommodate the nutritional needs. Stunting correlates with disorders of fine motor, gross motor, language, and personal social skills. This study aims to perceive an overview of stunted toddlers aged 24-59 months using the Prescreening Developmental Questionnaire (PDQ). The authors carried out this research in Air Dingin public health center, Padang, from April to September 2019. This research was descriptive that included 40 toddlers aged 24-59 months diagnosed with stunting. The data presentation was a frequency distribution table and percentage. This study obtained that 22 toddlers (55.0%) were girls, seven toddlers (17.5%) experienced a developmental deviation, and 26 toddlers (65%) had suspected developmental deviation. In short, there were several cases of stunted toddlers who underwent a developmental deviation.

INTRODUCTION

The WHO Child Growth Standard defines stunting by using the index of length-for-age or height-for-age compared to a limit (Z-Score) of less than -2 SD. (De Onis, 2015) In 2016, WHO published data that 22.9% of children under five years old are a stunted child. This report revealed a 56% stunting prevalence in Asia, 34.1% in South Asia, 25.8% in Southeast Asia, and 38% in Africa. (WHO, 2016).

Basic Health Research (Riskesdas) 2018 reported stunting data of the children in Indonesia. This data showed that the proportion of children under five years who were moderate and severe stunting was 30.8%, and children under five who were underweight and severe underweight was 10.2% (RISKESDAS, 2018).

The Ministry of Health published a Nutrition Monitoring Pocket Book in 2017. This report obtained data in West Sumatra that the cases of malnutrition and nutrition deficiency of the children under five were 3.4%. Other data revealed that children aged 0-59 months who suffered from malnutrition were 3.3%. Another report found 30.6% stunting children; in detail, children aged 0-59 months with moderate and severe stunting were 21.3% and 9.3%, respectively. These figures increased from the previous year –

18.9% stunted children and 6.7% severely stunted children. Data from Padang Health Office in 2017 reported that there were 3,269 (20.04%) stunted children (Kemenkes RI, 2018).

Stunting is one of the health problems caused by chronic malnutrition. The disproportion of feeding with the amount of nutritional need since pregnancy, infancy, and childhood can lead to a lack of nutritional intake. (Kementerian Kesehatan Republik Indonesia, 2018). There are direct causes – exclusive breastfeeding history, infectious disease history, inadequate food intake, and low birth weight – and indirect causes of stunting – parents' education level, parents' occupations, and the family's economic status. Stunted children may experience obstacles in their physical and mental development. Small children have a risk of decreased intellectual and an increased risk of degenerative diseases in the future (Danaei *et al.*, 2016).

Stunted children can experience disturbances in motor and mental development in childhood, a higher risk of experiencing communicable and non-communicable diseases, an increased risk of overweight and obesity, worsening achievement in school, and low education level that affect the future income. Stunting in children can become a factor that can predict the human resources' quality of a country. Stunting can cause long-term losses to the national economy (Crookston *et al.*, 2011). The stunting impact becomes the authors' background in conducting observational research on "The development of stunted toddlers aged 24-59 months using the Prescreening Developmental Questionnaire (PDQ) in the Air Dingin public health center Padang, 2019".

METHOD

This research was carried out in the Air Dingin public health in Padang from April to October 2019. This descriptive categorical research used the total sampling method, including all children aged 24-59 months who had previously been diagnosed with stunting and registered at Air Dingin public health center. The obtained sample size was 40 toddlers. Data collection on child development by an interview with mothers or child caregivers using the Prescreening Developmental Questionnaire (DPQ) (Dhamayanti, 2016). Data presentation were in terms of frequency and percentage.

RESULTS

In this study, table 1 below describes the frequency distribution of the respondents by gender:

Table 1. Characteristics of respondents based on gender

| Gender | <i>n</i> | % |
|--------|----------|------|
| Boy | 18 | 45.0 |
| Girl | 22 | 55.0 |
| Total | 40 | 100 |

Based on Table 1, from the 40 respondents, most of them were girls (55.0%).

This study obtained data on the frequency distribution of respondents' development in table 2 as follows:

Table 2. Frequency Distribution of Stunted Children's Development

| Development of Stunted Children | <i>N</i> | % |
|-----------------------------------|----------|------|
| Suspected Developmental deviation | 26 | 65.0 |
| Developmental deviation | 7 | 17.5 |
| Appropriate development | 7 | 17.5 |
| Total | 40 | 100 |

Based on Table 2, of the 40 respondents, 17.5% of the children experienced developmental deviation.

DISCUSSION

This study reported that – from 40 stunted subjects – 55.0% were girls (22 children). This finding was in line with Hanani's previous research in 2016 in Jangli Village that little children were mostly girls, as much as 54.5%. Another study conducted by Nasrul 2014 in Bontoramba District, Jeneponto Regency, obtained different results that most stunted children were boys (51.6%). In summary, boys and girls are at risk of experiencing stunting (Hafid and Nasrul, 2016; Hanani and Syauqi, 2016).

For a toddler, the first 1,000 days of life is a critical period. When a toddler obtains nutritional intake deficiency in the early 1000 days of life and experiences stunting, the toddler can have difficulties catching up with age-appropriate growth. For this reason, fulfilling the toddler's nutritional intake in the first 1000 days needs serious attention (Kemenkes RI, 2014; Husnah, 2017).

In this study, the Prescreening Developmental Questionnaires (DPQ) examination from mothers or caregivers showed 26 of 40 stunted toddlers (65%) indicated suspected developmental deviation. This finding was in line with Hanani's previous research results, in 2016 that 72.2% of small children experienced suspected developmental delay. Another study conducted by Hardiana Probosiwi in Kalasan, Yogyakarta, in 2017 obtained data on the suspected developmental disorder in children, about 38.68%. (Probosiwi, Huriyati, and Ismail, 2017).

When stunting occurs before five years old, developmental disorders can happen in motoric, cognitive, language, and social skills. The development of all brain parts that affect motoric, cognitive, and socio-emotional development is complete at five years (Vazir and Boindala, 2016; Arini, Mayasari, and Rustam, 2019).

The disturbance in the motoric area –experienced by stunted children – results from an obstacle in the muscle maturation process. That disturbance affects the mechanical ability of the muscles. Lack of nutrients for an extended period, especially the intake of energy, fat, and protein, will inhibit muscle tissue formation and maturation (Pantaleon, Hadi, and Gamayanti, 2016). Lack of nutrients also affects brain development and disrupts the development of the child's social skills. Children with stunting tend to express an apathetic attitude towards their social environment. Additionally, children with malnutrition

conditions will experience susceptibility to suffering from infectious diseases, both acute and chronic. The child becomes weak due to infection, less exploring the environment, and further influences the personal and social development of the child (Nahar *et al.*, 2012; Casale, Desmond, and Richter, 2014).

Developmental disorders in the cognitive and language areas can occur in stunted children because children aged 0 to five are still at the pre-operational stage of development, a developmental stage of children who are not ready to engage in activities requiring logical thinking. They can understand symbols, self-identity, the cause and effect of an event, and numbers and gather in a group. At this age, the child's language development process by carrying out a systematic mapping process in the brain also happens. When there is a long-term shortage of nutrients, there will be an obstacle in brain cells' development process (Gunawan, Fadlyana, and Rusmil, 2016; Hartanto *et al.*, 2016).

CONCLUSIONS

Based on the overview of the development of stunted children in Air Dingin Public health center in Padang in 2019, this study concludes that most stunted children are girls and experience suspected developmental deviation.

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