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Child Development Levels of Stunting Children Under Five Years: A Case Study in Indonesia

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ABSTRACT

Children under five years of age who experience stunting are at risk of experiencing physical, mental, social, and language development barriers. Non-pharmacological approaches to stunting are essential because stunting refers to a lack of growth in children. Therefore, a developmental examination, namely a pre-developmental screening questionnaire, must be conducted to identify non-pharmacological needs. The research aims to identify the development of stunted children. Descriptive research design, the population of all children experiencing stunting in the working area of the Mejuwet Health Center, Bojonegoro Regency, in 2023. The sample was 29 respondents, with purposive sampling. Data were collected using questionnaire sheets, and then editing, coding, scoring, and tabulating were carried out, followed by analysis. The results of the study showed that 31% of respondents with stunted children under the age of five experienced deviant development, 55.2% had questionable development, and only 18.3% had development that was appropriate for their age. Appropriate stimulation for the growth and development of children aged 48-59 months consists of several important activities, namely stimulation of gross motor skills, fine motor skills, speech and language, socialization, and independence. By involving children in these activities, we can help stimulate their development holistically. Monitor the child's growth and development regularly by having regular check-ups with health workers. The contribution of this research is recommended that the child's mother utilizes a non-pharmacological approach by providing support by inviting the stunted child to play puzzles, draw, color, and write to increase creativity, support speech, and increase socialization with peers.

Keywords: Development, Child Care, Children Under Five Years, Stunting, Child Health

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1. INTRODUCTION

Children who are less than five years old tend to experience stunting if their nutrition and parenting patterns are poor (Aprilina et al., 2021; Atamou et al., 2023; Kurnia et al., 2021). Parents consider short or stunted children to be something normal, parents think that their children can still experience growth because they are still children, even though if stunting is not detected early, they will experience delays for the following year. Stunting in children needs special attention because it can hinder children's physical and mental development (Rambe et al., 2023; Sk et al., 2021; Welis et al., 2022). The problem of stunting in children shows the socio-economic condition of society as a whole. This is because stunting is caused by factors that last over a long period (Ali, 2021; Kumar et al., 2021). The impact of stunting disrupts their current and future health, also hurts children's cognitive development (Alam et al., 2020),

disrupts development (Delima et al., 2023), and can reduce the quality of human resources (Indra & Khoirunurrofik, 2022). Children who experience stunting do not have ideal growth and development, which causes obstacles in physical and cognitive development, including delays in brain development which has an impact on intelligence. This will make it difficult for children to learn and achieve academic achievements while attending school (Argaw et al., 2022; Beckmann et al., 2021; Gansaonré et al., 2022).

Stunting is a global problem that occurs in many countries. Based on reports from UNICEF, WHO, and the World Bank, it is estimated that 149.2 million children (22%) in the world will experience stunting in 2020. The report also reveals that more than half of the population of children in Asia (53%) will experience stunting and two out of five children in Africa (41%) experience stunting. Globally, the number of stunted children has continued to decline over the last 20 years from 203.6 million in 2020 to 149.2 million in 2020 (Soviyati et al., 2023). According to data from the SSGI, it is stated that in Indonesia the percentage of stunted (very short and short) is 24.4% (Radali et al., 2024). Meanwhile, e-PPBGM data shows that 2.7% of children are very short and 6.5% of children are short (Lestari & Sari, 2023). From Health Department East Java Province (2022), the percentage of stunted children (TB/U) was 12.4%. According to data from Health Department Regency Bojonegoro (2022), the prevalence rate of stunting or short child status is 4.2 77 children or 5.7%. The highest prevalence rate of stunting in the Regency was the highest in the Mejuwet Community Health Center from the number of children aged 0-59 months whose height was measured as 1,778 children, of which 214 children experienced stunting/stunting (12.0%). A preliminary survey conducted by researchers on February 8, 2023, of 5 stunted children, found that 1 child (20%) had delays in speaking and 2 children (40%) had intelligence delays such as difficulty in understanding simple questions about the use of everyday objects, for example when asked about the usefulness of books, they could not give a precise answer.

Stunting is a condition where a child's growth is disrupted so that their height does not match their age (Laksono et al., 2022; Rambe et al., 2023; Scheffler & Hermanussen, 2022). When stunting is not treated properly, this can affect the child's overall development, including gross and fine motor skills (Omer et al., 2022), speech and language skills (Donowitz et al., 2022), as well as social aspects and independence (Meylia et al., 2022). Stunting over a long period, can affect the development of brain cells and limit the potential for axon and dendrite growth, synapse formation, and the myelination process. The part of the brain that may be affected is the left hemisphere which controls speech and language abilities. Stunted children can reduce their interaction with the surrounding environment and affect social and emotional development, such as decreased activity, feelings of unhappiness, and lack of curiosity. All of this can limit children's potential to adapt to their social environment (Mastuti & Indahwati, 2021). Stunting during childhood is very important and is taken seriously because it can affect a child's motor and intelligence development (Jatnika et al., 2024; Koshy et al., 2022). Other impacts of stunting in childhood include immune system depression, metabolic changes, decreased motor development, and decreased cognitive and academic performance (Farias et al., 2020; Nisa et al., 2023). Child development tests can be used to determine their development. Timely developmental screening is very important to detect any deviations in a child's development as quickly as possible and carry out early treatment. The tool for conducting screening is the Pre-Developmental Screening Questionnaire (KPSP) which is carried out from the child's age from 3 months to 72 months (Adani et al., 2023). This is expected to help in detecting and preventing developmental abnormalities in children.

Efforts that mothers can make for the development and mental health of stunted children are by providing parenting patterns such as stimulating children to develop according to their age level because this is very helpful in stimulating the brain to produce the hormones needed for their development. Stimulation can be given in various forms that are simple and easy to provide appropriate stimulation for development for ages 48-59 months consisting of several important activities, namely for gross motor stimulation, inviting children to play sack races, crank, jump rope, and play outdoors. To stimulate fine motor skills, train children to draw, cut, stick pictures, and play puzzles (Taverna et al., 2021; van der Straaten, 2022). In speech and language, teach numbers, colors, letters, and names of days, and encourage children to read and listen to stories (Bunga et al., 2022; Roberts, 2021). In socialization and independence, invite children to help with homework, play roles, train self-confidence, and provide simple choices (Soetrisno et al., 2022). Continuous stimulation given regularly will strengthen the connections between nerves that have been formed so that brain function will automatically get better (Sui et al., 2021; Vissani et al., 2020). Promotive efforts that can be carried out by health workers include providing education about the importance of providing appropriate developmental stimuli to stunted children, including how to recognize signs of normal and abnormal development. Provide information about effective ways to provide developmental stimuli, such as using language, music, toys, and physical activity. Help the mother create a daily activity plan that provides appropriate developmental stimulus for the child. Treat individually based on the child's condition, because each child is different in their level of development. Provide consultations with health workers who are experienced in the field of child development, such as psychologists or child therapists, and monitor and evaluate children's development regularly and make corrections if necessary. No-pharmacological approaches to stunting are essential

because stunting refers to a lack of growth in children. Therefore, a developmental examination, namely a pre-developmental screening questionnaire, must be conducted to identify non-pharmacological needs. The phenomenon that occurs in the working area of the Mejuwet Community Health Center is that the majority of children who are detected as having stunting also experience delays in speaking, social interaction, and creativity in playing (Health Department Regency Bojonegoro, 2022). Therefore, the research aims to identify the development of stunted children in the Mejuwet Community Health Center working area, Bojonegoro Regency.

Several previous researchers have studied the theme of child development levels of stunted children under five years. Research by Anastasia et al. (2023) looked at the development of stunting levels from a sociodemographic aspect using regression analysis. Research by Suratri et al. (2023) looked at the development of child stunting from a maternal education aspect using regression analysis. Research by Fatima et al. (2020) looked at the development of child stunting from an unvaccinated status, joint family system, maternal education, and child gender using cross-sectional analysis. Research by Vonaesch et al. (2021) examined child stunting from malnutrition and maternal education using regression analysis. Research by Soofi et al. (2023) looked at child stunting from diarrhea, age, gender, place of living, maternal age and education, household size, access to sanitation, and the state of food and wealth using a cross-sectional method. In contrast to these studies, this study analyzes stunting children descriptively and as a novelty; this study, in addition to the aspects studied by the five researchers, also explores the elements of gross motor skils, fine motor skills, speech and language, socialization, and independence.

2. METHOD

This research uses a descriptive method. Aims to describe the development of stunted children in the working area of the Mejuwet Health Center, Bojonegoro Regency. The population in this study were all children and mothers of children who experienced stunting in the working area of the Mejuwet Health Center, Bojonegoro Regency, totaling 95 children. Sample of 29 respondents using a purposive sampling technique. Variables in this study: Development using the pre-screening questionnaire, and development of stunted children. Data was collected using a questionnaire sheet then edited, coding, scoring and tabulating then analyzed.

3. RESULTS AND DISCUSSION

3.1. Results

The characteristics of mothers as respondents in this study based on age, job, and education are shown in Table 1 in the form of frequency distribution.

Table 1
Distribution of Children's Mothers Based on Age, Job, and Education

Children's Mothers	Frequencies	Percentage
Age		
< 20 years	0	0.0
21-24 years	2	6.9
25-29 years	13	44.8
30-32 years	10	34.5
> 35 years	4	13.8
Job		
No Work	12	41.4
Labor	1	3.4
Farmer	6	20.7
Self-employed	10	34.5
Civil servant	0	0.0
Education		
No school	0	0.0
Elementary	13	44.8
High school	12	41.4
University	4	13.8

Table 1 shows that the majority of mothers are aged 25-29 (44.8%), unemployed (41.4%), and have an elementary school education level (44.85%). The minority of mothers are aged 21-24 (6.9%), labor (3.4%), and have a university education level (13.8). The characteristics of children as respondents in this study based on gender, age, and stunting development are shown in Table 2 in the form of frequency distribution.

Table 2
Distribution of Children Based on Gender, Age, and Development of Stunting

Children	Frequencies	Percentage
Gender		
Male	12	41.4
Female	17	58.6
Age		
48-53 months	18	62.1
54-59 months	10	34.5
60 months	1	3.4
Development of Stunting		
Development child by stage development	4	13.8
Development child doubtful	16	55.2
Development There is a deviation	9	31.0

Table 2 shows that the majority of children are female (58.6%), aged 48-53 months (62.1%), and development child doubtful (44.85%). The minority of children are male (41.4%), aged 60 months (3.4%), and development child by stage development (13.8%).

3.2. Discussion

Stunting is a condition where children's growth and development are not optimal so that they look too short for their age (Rahayuwati et al., 2020; Saleh et al., 2021; Scheffler & Hermanussen, 2022). Stunting can be found in children whose height or body length does not comply with the standards set by the Multi-Center Growth Reference Study (WHO-MGRS) (Norris et al., 2024; Papageorghiou et al., 2018). When stunting is not treated properly, this can affect the child's overall development, including gross and fine motor skills (Omer et al., 2022), speech and language skills (Donowitz et al., 2022), as well as social aspects and independence (Meylia et al., 2022). This is in line with research by Wahyudi & Sufriani (2018), "Overview of the Growth and Development of Stunting Children in the Simpang Tiga Community Health Center Working Area, Aceh Besar Regency". Based on the research results, it was found that in the description of the growth of stunted children in the Simpang Tiga Community Health Center Working Area, Aceh Besar Regency, the majority were in the very short category at 51.4% with the development of children in the appropriate category at 54.1% and doubtful at 45.9%. Children who experience stunting have a risk of decreasing intellectual abilities, and productivity, and increasing the risk of degenerative diseases in the future. Therefore, stunting during childhood needs special attention, including children aged 2-3 years. The developmental process at the age of 2-3 years tends to slow down so that the opportunity for catch-up growth to occur is lower than at the age of 0-2 years. Age 2-3 years. This was also confirmed in research by Zakiyya et al. (2021), "Analysis of the incidence of stunting on the development of children aged 6-24 months", the results of the study showed that the majority of children's fine motor development was normal at 71.1%. Based on the results of the research hypothesis, the p-value = 0.011, meaning there is a significant relationship between stunting and fine motor development of children aged 6 to 24 months in the work area of the Perumnas 2 Community Health Center, Pontianak City. Children with stunting can have an impact on social development. The 6-24 month age period is a critical period for the child's development. This development process will be hampered. Judging from the development of children at this age, babies/children can already recognize and respond when their name is called. They feel happy when they have to interact with other people. Some babies/children tend to be more social than others. Among them, some smile easily, and some fixate on looking at people's faces without smiling. Delayed children show little interest in other people.

The results of research in the working area of the Mejuwet Health Center, Bojonegoro Regency, found that more than half of the children with stunting were in the category doubtful, this can be seen from the answers to the Pre-Screening Development Questionnaire (KPSP) based on age in children aged 48-53 months. Of the 18 stunted children for fine motor skills, such as making a bridge from 3 cubes, 3 children couldn't, this could be due to stunting. can cause stunted growth in the small muscles in their hands and fingers, making it difficult for them to perform precise and difficult movements. The hand and finger movements required to assemble the cubes precisely and precisely can be difficult for them. This is caused by limitations in their ability to properly coordinate hand and finger movements. Impaired fine motor skills can affect a child's ability to perform tasks that require precision. In the development of speech and language skills, 4 children are not yet able to say their full names and 12 children do not know the concept of the number one, for example, if they are given the task of taking a cube and putting it on paper, they have difficulty doing it correctly and saying "one". This shows that their ability to recognize numbers and apply them in action is still hampered. Apart from that, 8 children were stunted and also had

difficulty understanding simple questions about the use of everyday objects, for example when asked about the use of a table, they were unable to give the right answer. This shows that their language development and cognitive understanding are still limited. All of this indicates that there are limitations in the language development, thinking abilities, and cognitive understanding of children who experience stunting. In the development of socialization and independence, 5 respondents experienced difficulty in interacting with peers and understanding the rules of existing games, for example when playing snakes and ladders or hide and seek and 13 respondents had difficulty wearing t-shirts or T-shirts without the help of others, this shows limitations in their independence. In childhood, the development of independence is very important, and the ability to perform simple tasks such as dressing one's clothes is an important part of that independence.

The results of the research from the answers to the Pre-Developmental Screening Questionnaire (KPSP) based on age for children aged 54-59 months, out of 10 children with stunting for fine motor skills, 7 respondents could not draw people (boys, girls, papa, mama) and could not drawing people with at least 3 body parts, this can explain that they have difficulty in making smooth and precise movements, such as drawing people well, this shows that stunting can cause a decrease in hand-eye coordination, fine motor skills, and comprehension an object where the small muscles in a child's hands and fingers are not well developed, affecting their ability to perform fine and complex movements. For example, when children try to draw people, they have difficulty controlling the pen or pencil properly. They also find it difficult to describe body parts in detail, because they do not fully understand the relationship of an object between various parts of the body. In the aspect of speech and language, there were 4 respondents whose children's speech could not be fully understood by other people (who did not meet them every day). This shows that when children experience stunting, they have difficulty speaking and speaking, making it difficult for others to understand. Their ability to pronounce words clearly and convey thoughts clearly may not be fully developed, so other people face difficulties in understanding what they want to convey. For example, when speaking, stunted children pronounce words in a less clear voice, making it difficult for other people to understand them. They also have limitations in using the right words to express their thoughts or desires. In the aspect of socialization and independence. 5 children cannot follow the rules of the game when playing with their friends (for example: snakes and ladders, hide and seek, etc.), this shows that children who are stunted have difficulty interacting socially and becoming independent. When playing with friends, such as playing snakes and ladders or hide and seek, they have difficulty understanding the rules of the game and following turns. This can be caused by limitations in understanding the rules and the ability to adapt to the applicable rules. and 8 children cannot button their clothes or doll clothes, this shows that they are still limited in developing independence and the skills needed to carry out daily activities. The ability to button one's shirt is an example of an independent skill typically expected at that age. Research results from answers to the Developmental Pre-Screening Questionnaire (KPSP) based on age in children aged 60 months for gross motor skills of respondents who were standing on 1 leg without holding on were unable to maintain balance for 4 seconds or more. In the aspect of socialization and independence, children cannot button their clothes or doll clothes and cannot fully dress themselves without help.

The development of stunted children in the doubtful category found in this study could be due to one of the reasons for the mother's education, where as many as 44.8% only had elementary education (SD/SMP equivalent). In line with research by Yunitasari et al. (2021) and Laksono et al. (2022), maternal education plays an important role in children's development, including children with stunting. When mothers have limited knowledge about appropriate developmental stimulation, their children may not receive optimal stimulation for their motor, language, and cognitive development. Mothers' limited knowledge about correct developmental stimulation for stunted children can have an impact on their ability to provide adequate and stimulating interactions for children (Faridah et al., 2024; Saputo et al., 2020). Appropriate stimulation, such as playing, talking, reading, and singing, can help improve children's motor and language skills and stimulate their cognitive development (Crotty et al., 2023; Supartini et al., 2020). However, if mothers do not understand the importance of this stimulation or do not know the right way to do it, stunted children can lose valuable opportunities to optimize their developmental potential. In line with research by Mariska et al. (2022) and Rahayuwati et al. (2023), the high number of mothers who do not work in this study is related to the impact on the development of stunting children. In this case, inadequate eating patterns in children can be a contributing factor to stunting, namely stunted growth and lack of height in children, with mothers who do not work can affect children's eating patterns because of the potential for limited resources allocated to prepare healthy food. Mothers who do not work will face challenges in providing nutritious food that optimally meets their children's needs. It is important to understand that an inadequate diet in children can hurt their development. Adequate and balanced nutrition is very important to ensure that children get the substances they need to grow and develop well.

4. CONCLUSION

The development of stunted children in the Mejuwet Community Health Center working area, Bojonegoro Regency is experiencing delays. Appropriate stimulation for development for children aged

48-59 months consists of several important activities, namely for stimulating gross motor skills, inviting children to play sack races, crank, jump rope and play outside. To stimulate fine motor skills, train children to draw, cut, stick pictures, and play puzzles. In speech and language, teach numbers, colors, letters, and names of days, and encourage children to read and listen to stories. In socialization and independence, invite children to help with homework, play roles, train self-confidence, and provide simple choices. By involving children in these activities, we can help stimulate their development holistically. This research recommends that the child's mother utilize a non-pharmacological approach by providing support by inviting the stunted child to play puzzles, draw, color, and write to increase creativity, support speech, and increase socialization with peers. Monitor the child's growth and development regularly by having regular check-ups with health workers. This will help obtain an accurate evaluation of the child's development and necessary interventions if necessary.

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