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Maternal perceptions of developmental stimulation for stunted toddlers: A phenomenological study in remote Indonesian islands

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ABSTRACT

Background: Developmental stimulation is a shared responsibility among family members and is essential for children to achieve age-appropriate developmental milestones. However, limited evidence exists on how mothers perceive this crucial issue, particularly those with stunted toddlers.
Objective: This study aimed to explore maternal perceptions of providing developmental stimulation to stunted toddlers living on the remote islands of Indonesia and how these perceptions influence their children's growth and development.
Methods: A descriptive phenomenological design was employed, involving eight mothers of stunted toddlers residing in the unique context of the remote islands in Karimun District, Riau Islands Province, Indonesia. Data were collected using demographic data sheets, interview guides, field notes, and audio recordings. The data were analyzed using Miles and Huberman's method.
Results: Two main themes emerged: (1) child development was perceived in terms of intelligence, speech, and play; and (2) concerns regarding developmental issues. Two main themes emerged: (1) child development was perceived in terms of intelligence, speech, and play; and (2) concerns regarding developmental issues.
Conclusions: The findings revealed gaps in maternal understanding of child development among mothers of stunted toddlers. It is recommended that the heads of Community Health Centers and relevant stakeholders implement early detection and intervention strategies, provide health education on child development, and enhance the capacity of village health volunteers and parents to monitor toddler development. These efforts are crucial for improving the well-being and future of stunted toddlers and should be part of a comprehensive strategy.

Keywords: child development; mother-child interaction; stunting

INTRODUCTION

Stunting reflects inadequate development in children and is a sign of past deprivation, often serving as a predictor of future

Nursing and Healthcare Practices

- *Nurses should play an active role in improving mothers' understanding of child development through structured health education and counseling, especially in remote areas where access to accurate information is limited.*
- *Community health nurses and midwives should incorporate early developmental screening and parental guidance into regular health visits to identify delays early and provide timely interventions for stunted children.*
- *Nursing leadership should focus on training and empowering village health volunteers to monitor child development effectively, offer psychosocial support, and bridge the gap between healthcare services and the community.*

poverty. Globally, one in three children under the age of five experiences impaired growth due to malnutrition, including stunting, wasting, and overweight conditions (UNICEF, 2019). In 2019, approximately 21.3% (144 million) of children worldwide were affected by stunting, with 36% residing in Sub-Saharan Africa and Southeast Asia. Although the prevalence of stunting in Sub-Saharan Africa declined from 34.5% in 2012 to 31.1% in 2019, it still exceeds the global target (FAO et al., 2020). Stunting is associated with developmental delays in children aged 1–3 years (Mustakim et al., 2022), with affected children showing significantly lower developmental scores across all domains compared to non-stunted peers (Nahar et al., 2019) and a 2.07 times higher likelihood of experiencing developmental delays (Bishwokarma et al., 2022). Furthermore, childhood malnutrition negatively impacts neurodevelopment, cognition, academic achievement, and behavioral health, with stunted children exhibiting a 7% decrease in optimal cognitive development (Kirolos et al., 2022; Ekholuenetale et al., 2020). These findings underscore the urgent need for early intervention and nutritional support to address stunting and its long-term developmental effects.

Parenting practices are fundamental to promoting childhood development. Active and responsive parent-child interactions foster optimal growth, and effective parenting techniques improve developmental outcomes by encouraging meaningful engagement (Primasari & Keliat, 2020). Specifically, developmental stimulation provided by caregivers can reduce the risk of stunting and improve the overall condition of affected children. Research shows that adequate parenting practices, especially from mothers, play a protective role against stunting (Nugraha et al., 2019). In families with stunted children, mothers are often central to managing developmental challenges. Maternal characteristics—particularly education level—are key determinants of stunting prevalence and children's neurocognitive development (Amusa et al., 2022).

In Indonesia's Riau Islands Province, the prevalence of stunted toddlers in 2022 was 15.4%, with the highest rates observed in Lingga (18.9%), followed by Natuna (18%) and Karimun (13.3%) (Kemenkes, 2022). Local health data reported 1,130 stunted toddlers in Karimun Regency alone (Dinkes Karimun, 2022). Despite evidence highlighting poor developmental outcomes and limited parental stimulation among stunted toddlers, few studies have explored maternal perceptions of their children's growth and development. This gap in the literature underscores the importance of understanding how mothers in remote and underserved areas perceive and address stunting. Gaining insights into their perspectives is essential for developing targeted interventions and supportive health policies that effectively meet the needs of stunted children and their families.

METHODS

Design

The phenomenological study, based on the principles established by Edmund Husserl, aims to explore and understand the lived experiences of mothers who provide low developmental stimulation to children aged 18-24 months with stunting. Husserl's phenomenology is centered on the concept of the "phenomenon," which refers to how things appear in our consciousness. The approach involves

capturing and describing these experiences in rich detail, allowing for a deeper understanding of the essence of these phenomena from the participants' perspectives. Through this method, researchers focus on the subjective experiences of individuals, seeking to uncover the meanings and interpretations they assign to their experiences. The study involves in-depth interviews with mothers to delve into their perceptions, feelings, and actions in relation to their children's developmental challenges due to stunting. By adopting Husserl's phenomenological approach, the study aims to provide valuable insights into the complexities of maternal care and the factors influencing developmental outcomes in stunted children.

Ethical Consideration

Ethical approval for this study was obtained from the Nursing Research Ethics Commission, Faculty of Nursing, Universitas Syiah Kuala (IRB No. 112005210623). Prior to data collection, participants were informed about the study's purpose, benefits, and procedures. Emphasis was placed on the principles of autonomy, anonymity, and informed consent. Participants were assured of fair treatment, respect for personal rights, and freedom from discrimination throughout the research process.

Participants and Setting

This descriptive phenomenological study involved eight participants selected through purposive sampling based on predefined criteria to ensure relevance to the research phenomenon. Inclusion criteria were: (1) mothers able to articulate their experiences in caring for stunted children aged 18–24 months; (2) a Home Inventory score of ≤ 29; (3) family consent; and (4) willingness to participate. The HOME (Home Observation for Measurement of the Environment) inventory was administered in each child's home and consisted of 55 items scored as "Yes" (1 point) or "No" (0 points). In addition to the mothers, key informants included personnel from the Early Growth and Development Detection and Intervention Stimulation Program at the Technical Implementation Unit of the Community Health Center in Karimun Regency, as well as cadres, village or sub-district midwives, and the head of the community health center.

Data Collection

Data collection was conducted through in-depth interviews in the Indonesian language between August 2023 and January 2024. Participants were informed about the study's purpose, confidentiality, and their rights, including consent for audio recording. Each interview lasted approximately 20 to 40 minutes and took place at a location mutually agreed upon by the participant and the researcher. Field notes were taken following each interview to supplement the data. To enhance the credibility of the findings, source triangulation was performed with key informants, including the Head of the Public Health Center, the village midwife, the SDIDTK (Stimulation Detection and Early Intervention of Growth and Development) program coordinator, and village health volunteers.

Data Analysis

Data were analyzed using Miles and Huberman's method (Miles et al., 2014). The analysis followed three key steps. The first step, data condensation, involved collecting data, writing summaries, coding, developing themes, generating categories, and composing analytical memos. The second step, data display, consisted of presenting the coded data in tables with thematic flows, followed by organizing the codes into relevant subthemes and themes. The final step, drawing and verifying conclusions, involved interpreting the data to answer the research questions and ensure the credibility of the findings.

Trustworthiness

To ensure the trustworthiness of the data in this study, the researchers applied the four established criteria of qualitative rigor: credibility, transferability, dependability, and confirmability. Credibility was established by thoroughly examining the research process to ensure that the findings accurately reflected participants' experiences and the research context. Transferability was addressed by providing clear, detailed descriptions of the research setting and findings, enabling others to assess the applicability of the results in similar contexts. Dependability involved validating the data through a structured and systematic analysis process, in alignment with qualitative research principles. Lastly, confirmability was ensured by presenting the findings transparently, allowing other researchers to review and evaluate the data and interpretations, thereby minimizing researcher bias.

Table 1. Characteristics of participants (N=8)

No	Age	Job	Educational Background	Marital Status	Duration of Marriage	Num. of Children	Type of Family
1	40	Housewife	Junior High	Married	10 Years	3	Nuclear
2	41	Housewife	Elementary	Married	14 Years	5	Nuclear
3	48	Housewife	Senior High	Married	11 Years	2	Nuclear
4	30	Housewife	Senior High	Married	2 Years	1	Nuclear
5	43	Housewife	Elementary	Married	2 Years	3	Nuclear
6	39	Housewife	Elementary	Married	4 Years	1	Nuclear
7	45	Housewife	Elementary	Married	18 Years	4	Nuclear
8	30	Housewife	Senior High	Married	6 Years	2	Nuclear

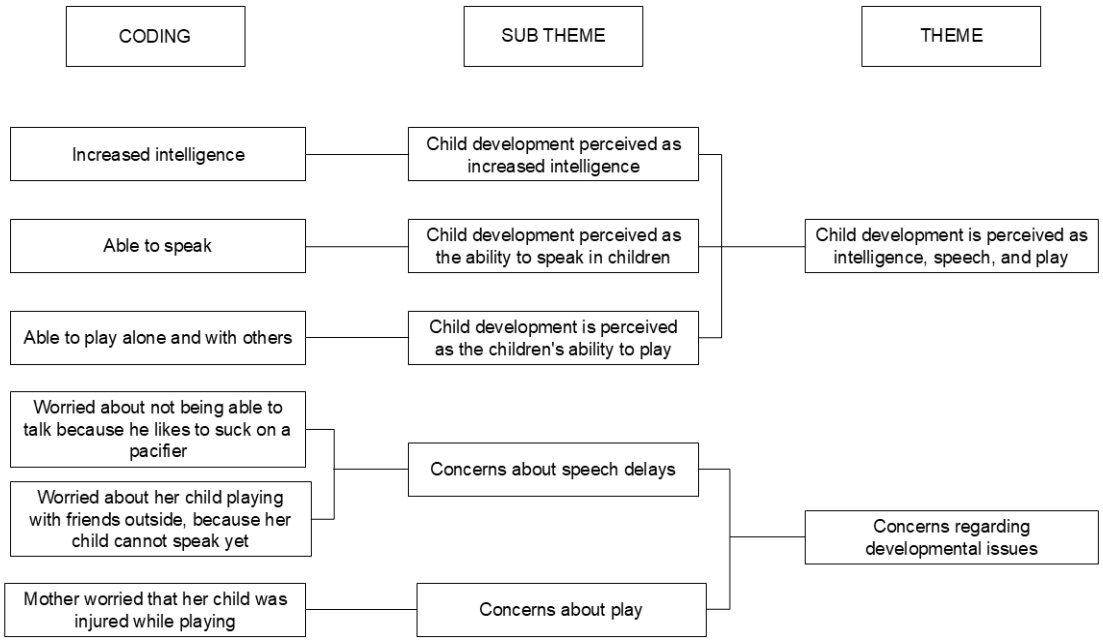

Figure 1. Data analysis based on the theme analysis of the perception of growth and development in mothers who have stunted toddlers

RESULTS

A total of eight participants were involved in this study, ranging in age from 30 to 45 years. All participants were housewives, with most having an elementary school education. The average duration of marriage was over ten years, and most participants had more than one child. The majority of families were nuclear in structure (Table 1).

Child Development is Perceived as Increased Intelligence, Speech, and Play

This theme reflects mothers' perceptions of child development, which include three sub-themes: (1) development as increased intelligence, (2) development as the ability to speak, and (3) development as the ability to play.

Child Development Perceived as Increased Intelligence

> *"More resourceful, heavier, and more intelligent. What else, I do not know. "(P1)*
> *"Intelligence, for example, the way of speaking: his older brother used to speak clearly for a year and a half, while his younger brother only speaks the ends; he understands; it is just that he understands when we talk to him." (P3)*

Mothers think that children experience development when they become more intelligent compared to their previous age when they could not do anything until the addition of their intelligence accompanies the increasing age of the child.

Child Development is Perceived as The Ability to Speak

> *"The smart thing? Well, they can speak for themselves. For example, when they want to defecate, mom I want to defecate (the participant imitated her child's speech style) quickly run so that the children get smarter, we teach them, we take them to the toilet, pants are removed, my children do not use diapers." (P1)*
> *Clever? Does that mean they are good at speaking? They are good at speaking, but they are just not clear yet. They have already got to call mom, dad, and brother. They can talk if they want to eat, drink, or pee. I want to pee." (P7)*
> *"Sometimes they can say this; sometimes we understand, Mom, I want this, they can say that. You know, they want, you know, snacks." (P8)*

Intelligence is also defined by the children's ability to speak. For example, the children may not have talked much before but can say a few words and sentences as they age.

Child Development is Perceived as The Ability to Play

> *"If they are healthy, they play; if not, they sleep and cry. The development is something like that: playing." (P2).*
> *"Playing, or they can do many things. They understand, and I have taught them. They understand. But they have a hard time with other people; they are scared. They can understand sometimes. If they want to do anything, they can do it." (P8)*

Children can also play and interact with family members and friends their age. They are perceived as well-developed if they can play with family members and friends.

Concerns Regarding Developmental Issues

Concerns regarding developmental issues included two subthemes: 1) concerns about speech delays and 2) concerns about play.

Concerns About Speech Delays

> *"They like to suck on this (pointing to the pacifier); it is hard, I am sometimes pulled, and if they want to sleep, there must be this pacifier. If I throw it away, they can not sleep; automatically, if they suck on it, they rarely talk." (P3)*

The mother is concerned about her child's developmental problems, namely speech delay, due to the child's habits. Mothers also experience concern that if the child's speech development and language skills are hampered, the child will experience speech delay, making it difficult for them to interact with others.

> *"I am not afraid; it is just that sometimes I am not sure when they are following another person, they are not very good at speaking, and they also still do not understand how to walk." (P3)*

Concerns About Play

> *"Playing with scissors, Afraid they will play with matches, sometimes afraid they will play with needles. Afraid they will play with that. Sometimes, they follow their brother to cut paper. If they play with their brother, I fear they will climb; they have fallen off the bed and tangled up." (P1)*
> *"Sometimes things like lamps are dangerous too, and I am afraid too. I do not dare very much. The thing is that these objects have electricity and lights; I am afraid that if I do not buy them when they want them if I do not buy them, they will cry, a child, you know, so I have no choice but to buy them. However, sometimes at home, when they play, I accompany them, afraid because there are lights, afraid they will get stabbed by the wire." (P3)*

The mother tries to keep the child away from

dangerous objects when the child is playing.

DISCUSSION

This study found that mothers of stunted toddlers perceived their children's growth and development primarily in terms of intelligence, speech, and play, while also expressing concerns about developmental problems. Stunting remains a prevalent issue in Indonesia and is known to hinder both physical and cognitive development in children. Perception plays a key role in shaping parental behavior, serving as a foundation for how parents respond to and manage their child's condition. Without sufficient knowledge about stunting—its causes, consequences, and management—mothers may form inadequate or inaccurate perceptions.

Parental perceptions of stunting prevention vary and are influenced by individual experiences and sensory interpretation. Perception is shaped by how individuals process stimuli received through their senses—sight, hearing, touch, and more—based on past experiences and attentiveness (Aronson et al., 2016). In this study, some mothers equated signs of intelligence, such as the ability to speak or gain weight, with the absence of stunting. Children who could talk or learn new words were often seen as non-stunted, regardless of their physical or developmental status. However, stunted toddlers are prone to delays in gross and fine motor skills, as well as in speech and language development. These delays triggered concern among mothers, particularly when their children had difficulties interacting or speaking during play with peers.

Language development is strongly influenced by parental perceptions and concerns. As children interact with their social and linguistic environments, their language skills reflect broader cognitive and emotional development (Doove et al., 2021). Parents' worries about speech delays can serve as early warning signs of broader developmental issues (Lin et al., 2022). Mothers in this study also worried about safety when their children played with potentially dangerous objects like scissors, matches, or electrical cords. In most cases, children were supervised by their mothers or older siblings to prevent harm.

Perception not only influences how mothers interpret developmental cues but also guides their parenting behavior and responses to their children's needs (Indah, 2020). Development in children occurs in sequential stages, where each stage depends on the successful completion of the previous one. For instance, a child must learn to stand before walking. Thus, early development significantly impacts later progress, including cognitive skills such as memory and reasoning. Healthy children show steady improvements in weight, height, and intelligence as they grow older. These developmental phases follow a systematic pattern and cannot be reversed—for example, a child typically learns to draw a circle before a square, or to stand before walking. Various factors affect child development, including genetic, nutritional, neuroendocrine, environmental, and social influences (Wong et al., 2014).

Nutrition-sensitive interventions account for 70% of stunting-related efforts and are often implemented through cross-sectoral activities beyond the health sector. These include access to clean water and sanitation, food fortification, reproductive and child health services, National Health Insurance (JKN), Universal Childbirth Insurance (Jampersal), and parenting education. Other initiatives involve early childhood education (PAUD), adolescent reproductive health, community nutrition education, and social support programs aimed at food security and poverty reduction. Despite these efforts, developmental stimulation remains underemphasized compared to nutritional interventions. Therefore, it is essential to encourage parents to voice concerns about their children's development and to ensure the availability of timely and appropriate services (Pratte et al., 2020).

CONCLUSION

The research findings revealed issues in mothers' perceptions of their children's growth and development, which need to be addressed by stakeholders both within and beyond the health sector. Accurate maternal perceptions are essential, as they significantly influence the provision of psychosocial stimulation—an important factor in promoting healthy growth and development, particularly for stunted toddlers who require special attention. Without adequate parental involvement, it becomes challenging for children to reach their developmental potential. It is recommended that the heads of Community Health Centers and managers of early detection and intervention programs enhance health education efforts

and strengthen the capacity of health cadres and parents to monitor and support toddler development effectively.

Declaration of Interest

The authors declare no conflicts of interest.

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Data Availability

None

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