

## Maternal barriers to stimulating early childhood development on Tidore Island

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### Abstract

**Background** The first 5 years of life provide a foundation for neuroplastic development, which establishes the capacity to accomplish complicated tasks in later life. However, this period is vulnerable to multiple stressors and adversities that prevent children from achieving age-related developmental milestones. Mothers as primary caregivers may find it challenging to engage her child in stimulating activities.

**Objectives** To understand maternal barriers to stimulating early childhood development and potential interventions that can be developed.

**Methods** This explorative, qualitative study was conducted in 13 different service coverage areas of the Soasio Community Health Center (Puskesmas), Tidore Islands, North Maluku, Indonesia. A total of 30 mothers participated in structured interview sessions. The analysis was conducted inductively, by generating some key issues from the interview.

**Results** Eight maternal barriers to engaging in child stimulation activities were found: (1) family members, (2) gender-related interaction, (3) partial understanding of child health-related information, (4) prioritizing one developmental achievement over others, (5) timidity in decision making, (6) delaying stimulation due to overreliance on the role of school, (7) responsive feeding, and (8) media. Maternal motivation, societal awareness of child development, and support of maternal and family mental health are needed to improve maternal engagement in child stimulation.

**Conclusions** Family, community, and life experiences may become maternal barriers to stimulating childhood development. Providing better social support, information access, and woman empowerment in decision-making will help mothers to be more engaged in child development stimulation activities. [Paediatr Indones. 2023;63:361-9; DOI: <https://doi.org/10.14238/pi63.4.2023.361-9> ].

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Parents, teachers, and healthcare providers should pay close attention to infection, nutritional status, and early identification of possible diseases during this age, accompanied by optimal psychosocial motor stimulation to nurture development. Such attention requires collaboration among family members and society.<sup>1</sup> More than 200 million children under five years old are estimated to have failed to reach standard developmental milestones.<sup>2</sup> Moreover, 8% of children under five years old experience developmental disability globally, of whom 95% live in low-middle income countries (LMICs).<sup>3</sup>

Although the *World Health Organization* (WHO) has mentioned that the prevalence of developmental difficulties was inconclusive, there is sufficient evidence to state that the child developmental issues is a widespread problem globally. Three major factors have been confirmed to disrupt child development: environmental toxins, caregiver inadequacy, and socioeconomic restriction.<sup>4</sup> As such, traditional childcare focusing on physical health (minimizing

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infection, ameliorating nutritional deficiencies, and early identification of possible diseases) should be accompanied by psychosocial stimulation to nurture child development. Such attention requires collaboration among parents/caregivers, family members, society, and the environment.<sup>5</sup> Stimulation should cover cognitive, social, emotional, physical, and language development by combining bidirectional verbal and nonverbal communication, introducing a variety of play or activities that include a broad physical-sensory experience, and creating opportunities for children to interact with more people or objects.<sup>6</sup>

Furthermore, sensitive and responsive parenting has been reported to be correlated positively with child physical and mental health, manifesting as improved behavior and cognitive function.<sup>7</sup> Sensitivity is defined as the understanding and awareness of the child's body language and unique features, such as his or her voice, and the ability to interpret them correctly.<sup>8</sup> Responsiveness is based on the parent's interaction with their child through timely, suitable, and appropriate responses to the child's behaviors as well as verbal-nonverbal signals.<sup>9</sup>

A meta-analysis found a positive correlation between home parenting and cognitive-psychomotor development among children under 5 years.<sup>10</sup> Similarly, a prior study in LMICs discovered that psychosocial stimulation maintained by responsive parenting had a significant positive impact on preschool children's motor, language, and cognitive development.<sup>11</sup>

The extent to which this stimulation has been and can be applied in the Indonesian community still needs further study. Interestingly, the *Indonesian Ministry of Women's Empowerment and Child Protection (Kementerian Pemberdayaan Perempuan dan Perlindungan Anak Republic Indonesia)* has published *Profil Anak Indonesia 2021 (2021 Indonesia's Children Profiles)*.<sup>12</sup> This publication described, among other things, parent-children activity, and reported that dining together with parents was only experienced by 25% of children in Indonesia. It did not assess further whether responsive feeding (making eye contact, introducing a new type of food, not forcing children to eat, eating behavior) was practiced by the parents.<sup>12,13</sup> In addition, only 18% children under 4-year-old were able to talk to their parents daily. This finding was fascinating since it was also reported that 84.33%

of children live with both parents.<sup>12</sup> Although the survey did not explore the effect of children's welfare and daily habits on their developmental status, the brief results indicate that many Indonesian children are at risk of under-stimulation from their caregivers.

Primary healthcare (PHC) can play a crucial role in fostering appropriate child stimulation practices by parents, since families usually have closer contact with their local PHC in comparison to larger healthcare institutions such as hospitals. Such contact starts from intrauterine life, as mothers undergo examinations by local midwives, to childhood immunization programs and routine well-child nutritional and developmental monitoring.<sup>13</sup> Similarly, PHCs act as a platform for healthcare professionals (HPs), particularly clinicians, to balance the disease-based mindset with the larger contributors of pediatric issues in daily life settings (socioeconomic, cultural, and hygienic).<sup>14</sup> PHCs increase the chance for children to have a medical home. Nonetheless, the lack of HPs in PHCs and inadequate training, particularly in rural areas, have made it difficult to follow up on child development.<sup>4</sup> This condition was worsened by the COVID-19 pandemic, as limited social interactions led to a decline in PHC utilization, more patients lost-to-follow-up, and failure of certain public health interventions.<sup>15,16</sup>

In Indonesia, the integrated services post (*posyandu*), a service manned by HCs from the local community health center (*puskesmas*) and trained lay-person volunteers, also plays a crucial role in monitoring child growth and development. Routine activities at the *posyandu* include anthropometric measurement and nutritional status screening, mandatory age-appropriate vaccination, as well as vitamin A supplementation and anti-parasite drug administration. This outpost can also be mobilized to deliver education on early childhood stimulation and monitoring of child development.

This study aims to understand maternal barriers to stimulating early childhood development and potential interventions that can be developed in children below 5 years of age in Tidore Island, North Maluku. Noting the crucial role of PHCs, this developmental assessment was conducted targeting children below age 5 who attended the *posyandu* in one of the 13 different subdistricts (*keurahan*) of Tidore Island from February-April 2022. The Indonesian-

adapted and validated version of the *Prescreening Developmental Questionnaire* (PDQ), locally known as *Kuesioner Praskrining Perkembangan* (KPSP), was used.

Further follow-up using a qualitative method was done to elaborate the findings on parenting culture. We explored this issue with the mothers, due to society's typical gender role and the fact that women are the primary caregiver in large parts of Indonesia.<sup>17</sup> Therefore, our results may provide evidence for a variety of innovative childhood development interventions in the near future, not just adhering to the current stunting, immunization, and infection control focus in which many PHCs in Indonesia routinely engage.

## Methods

In this explorative, qualitative study, a purposive sampling method was used to recruit mothers from 13 subdistricts within the service coverage zone of Puskesmas Soasio, a governmental PHC that serves the largest area and population on Tidore Island. Most of these subdistricts are geographically located at the seaside-lowland region (Seli, Soadara, Soasio, Gamtufkange, Indonesiana, Goto, Tuguwaji, Tomagoba, and Topotiga), while four others are in hill-highland regions (Topo, Tambula, Folarora, and Gurabunga). We included mothers who had at least one child aged 2-60 months and had regularly attended the Posyandu program. Other inclusion criteria for the mothers were age of 20-40 years, not within pregnancy or postpartum periods, not working as HPs, and not having a health science-related degree. Mothers were informed about the study requirements and were asked to provide written informed consent. The sample size was determined by saturation of the data. This saturation was established by simultaneously conducting the interview and analysis to see the reoccurrence of answer patterns. When no new inference could be produced from adding another participant, it was concluded that the saturation has been reached. A total of 32 mothers initially participated. However, two participants were excluded because their audio records were inaccessible.

Semi-structured interviews consisting of nine main questions were used. One-on-one interviews of

mothers were guided by an all-female team consisting of a trained and licensed village midwife and a dietitian who were experienced in conducting similar exploratory interviews. The in-person interviews took place at various *posyandu* from March to April 2022. Interviews lasted for 20-30 minutes and were conducted in Indonesian and a Tidore dialect. Interviewers wrote field notes and made audio recordings. To maintain confidentiality, participants were identified by numbers instead of their names or initials.

The interview records were transcribed verbatim without changing the Indonesian and local dialect terms. Each author independently listened to the recordings and read both the interview transcripts and the field notes to be aware of the mothers' state of mind. Moreover, the authors will consider the actual circumstances during the interview to understand the explicit and implicit contents.<sup>18</sup>

Each author would analyze the interview data independently using the inductive approach by generating meaning units, condensed meaning units, and coding. Then, the authors worked together to regroup the coding to ensure that the final categories met the criteria of mutual exclusion (avoid overlapping categories) and were exhaustive (avoid missing categories that should be regrouped from the coding).<sup>18</sup> Finally, the authors generated themes to explain the barriers noted. For publication purposes, all quotations were translated into English. This study was approved by the Institutional Review Board of Puskesmas Soasio.

## Results

Demographic characteristics of subjects are summarized in **Table 1**. The median maternal age was 31.2 years, and the median number of children was 2.2. Eight of 30 subjects lived without their husbands, mostly because their husbands worked outside Tidore Island. Additionally, 19/30 mothers lived with their child's maternal or paternal grandparents. The majority of participants were high school graduates (28/30); 11/30 had bachelor's degrees. Half of the participants were full-time housewives, and the rest worked as government employees, entrepreneurs, farmers, or laborers. Almost all participants were members of the

national health insurance plan run by the Indonesian government. Of these, 17/30 had non-contributory health insurance, which meant that their monthly premium was fully covered by government funding. Twelve of 30 mothers were in the contributory scheme, and one subject was uninsured.

**Table 1.** Demographic characteristics of subjects

Maternal characteristics	(N=30)
Median age, years	31.2
Median number of children	2.2
Marital status, n	
Married	28
Widow	2
Household situation, n	
Living with husband	22
Without husband	8
Living with parents	19
Highest education attained, n	
Elementary school	2
Junior high school	0
Senior high school	17
Bachelor's degree	11
Occupation, n	
Housewife	15
Government employee	5
Entrepreneur	2
Farmer	6
Laborer	2
Active health insurance, n	
Public – non-contributory	17
Public – contributory	12
Private	0
None	1

From our interviews of mothers of young children, we identified 8 barriers to maternal engagement in child stimulation, as described below.

### **Barrier 1: Family-related obstacles to child stimulation**

The mothers acknowledged that the barriers to stimulating their children could come from family members (Table 2). Several mothers noted that grandparents' desire to fulfill the child's requests led to numerous developmental issues, including delays in speech, motor skills, and independence. In addition, several mothers told us that their husbands were generally supportive of working together on their child's development. However, there was a

lack of father-child time, especially with fathers who worked long hours as field workers. Some fathers worked on other islands, and the separation made it hard for them to be involved in child stimulation activities. Furthermore, mothers also believed that older children's behavior could impact their younger siblings.

### **Barrier 2: Gender-related norms for interaction**

Community norms differentiate play between boys and girls. Although many mothers suggested that cross-gender interaction and role-play with parents could be beneficial for their child's psychosocial development and build better parent-children relationship, normative societal boundaries had to be observed. Some mothers restricted their child if his/her gender-related behavior was subjectively undesirable.

*"Oh.. Play is important, but no more buying new toys. She likes cars way too much. I've given her dolls, but she didn't even touch them. If I keep giving her what she wants, she will act like boys."*

Moreover, society has provided opportunities for the children to have activities with same gender and similar age peer group.

*"My son is the youngest of four. He has three sisters and no brothers. I once felt uncomfortable imagining him imitating his sisters. Nevertheless, as he grows up, I encourage him to interact with other boys in the neighborhood. He's doing well now."*

### **Barrier 3: Partial understanding of information on child health**

The mothers in our study regularly attended the *posyandu*, hence, several received health information from healthcare workers. Mothers compared the information they received to their child's development. However, awareness of several issues could be incomplete if mothers had only partial understanding.

*"My youngest daughter's condition confuses me. She's quite short. She is probably stunted, but I'm not sure. The midwives said stunted children are not healthy. They will have brain development issues. However, her sister is also short, but gained the first rank at school."*

The expansion of internet connections in more parts of the island has given people access to online media in the form of written text, graphic information, and videos. Some mothers have taken advantage of internet access and claimed to be actively engaged

**Table 2.** Family-related barriers to child stimulation as perceived by mothers

Barrier	Quotation
Child's grandparents	<p>"I think his grandpa and grandma are very well experienced. They spoil my son and know what my son wants although he doesn't say anything. He gazes, and they will give him what he asks. Sadly, it becomes his habit to say no words and use his face and fingers to communicate."</p> <p>"He is the first grandson. Every single day, his grandparents will carry him. Well, he loves it, but when he meets other people, he will raise his hands, asking them to carry him too. Actually, he's almost 2 (years old) and has already tried to grab something to start walking, but if somebody notices it, he pretends to fall. He cries until that person comes to carry him again."</p>
Husband (child's father)	<p>"If I am exhausted, I still have to play with my children. If their father is tired, he will kiss them and go to bed."</p> <p>"Her father works on a different island and he told me not to bring my daughter outside our house too often. So, I have to deal with this situation by inviting her cousin almost every day."</p>
Older children (child's siblings)	<p>"I've motivated her to speak. However, she seemed to be too shy. I guess, her brother situation with his cleft palate makes her afraid because his unclear pronunciation is often laughed at by his peers. Don't you think it affects her mentally?"</p> <p>"I have never introduced him to internet videos. His sister did. You know what? Since then, he started to sleep at 2 am!"</p>

in social media. Unfortunately, many unconfirmed pieces of advice could only be understood with prior knowledge, leading to incomplete comprehension.

*"I teach my children to walk on the grass to help them distinguish textures and stimulate their motor development. All barefoot, as the online article has advised. I wonder sometimes, will this activity increase their risk of getting a worm infection?"*

#### **Barrier 4: Prioritizing one developmental achievement over others**

With regards to mothers' fragmented understanding of child health, we discovered that some mothers focused on particular developmental achievements and delayed other forms of stimulation, even though they knew that all should be achieved simultaneously.

*"We are waiting until she is 2 years old to let her play with other people (outside household members), or at least once she can distinguish who her parents and grandparents are. For now, we focus on walking and her language ability because I have read that the first 2 years are the golden period for language development. Wearing clothes... I think those can be caught up later since they will be more useful when she's in the elementary school age."*

#### **Barrier 5: Timidity in decision making**

Mothers make parenting decisions in daily life. Before the decision is made, mothers often look for external validation for their beliefs and actions. Nevertheless, they often find it difficult to make assertive decisions and often end up following the opinion of the majority.

*"One day my daughter was sick. Her grandparents didn't allow me to bring her to the doctor because they believed that her illness was a sign of a that her body is gaining strength to grow faster and smarter. In reality, after three days her condition worsened with high fever, coughing for 5 minutes straight, and difficulty breathing. I panicked and without any further ado, I took her to the doctor immediately."*

Moreover, mothers' hesitancy to assert her maternal authority could be due to a bias from previous experiences.

*"The pediatrician has referred him to the rehabilitation medicine specialist. How to say it... My son was so troublesome. He threw the waiting room and treatment room into disarray. We were worried that the doctor would be annoyed, hence, we never returned."*

#### **Barrier 6: Delaying stimulation due to overreliance on the role of schools**

Mothers acknowledged the importance of educational institutions for child development. Interestingly, some mothers trusted the school more than their own efforts at reversing their child's developmental delays. They confirmed that they were less worried about their children's developmental issues if the children attended school.

*"We have not taught him how to brush his teeth, sit and eat by himself, or anything else. He is late (for his age) in terms of walking, isn't he? The most important thing is that he learn how to walk first, then the rest can be taught at preschool."*

Specifically, the role of teachers and peer groups at school was also mentioned as crucial in shaping their children's progress.

*"I don't mind (if he has speech delay). Okay, a little bit. But, later in kindergarten, the teacher will force him to speak properly, he will have more friends, and he will learn chanting prayers. He will follow them or he will feel ashamed, won't he? His sister once had a similar issue (speech delay). She didn't talk at all, but she became talkative soon after entering kindergarten."*

### **Barrier 7: Challenges in responsive feeding behavior**

During the interview, all 30 mothers agreed on the importance of active play to stimulate children. However, the role of appropriate feeding behavior was less likely to be mentioned. Most mothers focused on the food's nutritional value for their children. They were concerned about their children's lack of appetite for a variety of foods and may have forced their children to eat.

*"He often asked me to buy chips when we passed a shop. However, he eats chips way too much right now until he does not want to eat what I cook. Sure, I have forced him. Many times... Still, no use. Even if he wants to (eat), chips must be added to the rice. If not, he will scream and throw tantrums."*

A few mothers confirmed that they actively talked and communicated interactively or role-played with their children during feeding time. However, most mothers could not give a clear explanation of how feeding was a stimulating activity for young children. We concluded that the mothers' perception of "being engaged" was the child's obedience during the meal.

*"We sit together, always. Because the only time he can watch TV is during mealtime. He can watch, too, I don't forbid it. I choose this simple activity because I'm afraid he will run too much, be talkative, then choke on his food."*

### **Barrier 8: Child's media consumption**

Technology has become part of the modern family and the mothers in our study did not deny it. Nevertheless, most of them agreed that digital media consumption at an early age is unhealthy. Few mothers could elaborate on the effects of digital media on child development, while others' main concerns were the

child's eye condition and sedentary behavior induced by excessive screen time. Furthermore, some mothers indicated that it could be a learning tool, although they found difficulties in regulating their children's media consumption once they had been exposed to digital media.

*"I used to think, introducing him to English videos would make him adapt to a foreign language faster. However, until now he speaks neither English nor Indonesian. I do not know whether I should stop showing (those videos), but he seems to understand the language although he never utters a word."*

Some mothers also discussed the use of entertainment media to keep their children calm. However, they acknowledged that some unfiltered information could be wrongly perceived by the children.

*"Every time he looks bored, I show him some dance videos. He copies the movements in everyday life. Sadly, some of them are inappropriate. If I am angry about what he does, he mocks me even more. Should I pretend that everything is okay? Of course not. He thinks what the video shows are what common people do in everyday life. No anger, no rules, just joking around."*

## **Discussion**

In this qualitative exploration, we found (1) family members, (2) gender-related interaction, (3) partial understanding of child health-related information, (4) prioritizing one developmental achievement over others, (5) timidity in decision making, (6) delaying stimulation due to overreliance on the role of school, (7) responsive feeding, and (8) child's media consumption to be barriers to better stimulation their children.

Family relationships have bidirectional impact, as each family member influences others' feelings, beliefs, attitudes, and behaviors. Hence, family situations affect mothers and vice versa.<sup>19</sup> Stressful events lead to bad decision-making, and bad decisions lead to more stressful events.<sup>20</sup> Situations in which the woman is powerless in decision-making and emotionally or physically abused may negatively affect the child's upbringing.<sup>21</sup> Therefore, barriers to child stimulation also encompasses (1) who makes the decision, (2) how it is made, (3) how the child and other family

members react, and (4) how further observations lead to subsequent family decisions.

The cultural context of our study included grandparents as the child's caregivers. Although grandparents' involvement suggests support of the child's well-being, it is important to note that grandparents' biases may conflict with who should make family decisions related to child-rearing.<sup>22</sup> Differing paradigms on what is considered to be healthy for children may trigger conflicts between grandparents and parents, even to the detriment of the child.<sup>23</sup> However, limiting child-grandparent interactions has never been recommended, as a study found that caring for grandchildren improved grandparents' physical and mental conditions.<sup>24</sup>

Therefore, the "one influences one" family concept should be advocated to better equip the extended caregiver with current evidence on child development using a culturally accepted approach. Furthermore, empowering parents, especially mothers, to set the same goals for child development is necessary and should include the ability to communicate their goals to the family. Moreover, sharing responsibilities and building a caregiver support group system should not only be limited to the primary caregiver. Social support systems for fathers, grandparents, and elder siblings should be established, which includes collaboration from healthcare institution to promote better health-seeking behavior.<sup>25</sup>

In our study, no mothers reported difficulty initiating stimulating activities. The social interaction system in Tidore makes it easy for mothers to socialize and share toys with neighbors or relatives. Some mothers also explained that fathers were well-engaged in outdoor activities and initiated making toys from bamboo, sand, and recycled paper. Mothers responded that the most important thing about stimulation and play was the time duration and quality of a child's involvement. They believed that certain toys or media could facilitate stimulation, but it did not mean that the stimulation could not be achieved without those items. This finding differed from a study in American low-income urban community, in which subjects perceived that specific toys or media held a central role in child development over others.<sup>26</sup>

In the communal society of Tidore, overcoming a child's developmental issue should not be restricted to family empowerment alone. Mothers stated that child

development advice was often given by neighbors, friends, and extended family members without closely observing the child. Those external parties often dictated mothers to act after examining other children's development. Advice was given based on generalizations about child development, not advice specific to the particular child. The idea of "each child is unique and each one needs unique treatment" should be widely promoted. Such awareness and individual's adjustment of stimulation activities should also be strengthened in preschools.

Our study indicated that the maternal barrier also came from incorrect information and how the mothers comprehend the given information. False information that incorporated social and cultural norms, local wisdom, and religious beliefs were often validated by society or respected figures, pressuring or even forcing mothers to follow suggestions that were generally accepted as fact. We also found mothers who routinely search for health information from a reliable source, such as doctors and midwives, but they could not integrate between all the information received. Such scattered understanding led them to create assumptions about child development to "tailor" their unique nurturing style.

Lastly, maternal mental health is also a concern and should not be ignored. Confusion, worries, societal standards, and other daily struggles may affect mothers' mental health. A safe haven in society needs to be formed, starting from the PHCs, to help mothers deal with such problems. Moreover, mothers need to be motivated to discover their child's interests so that time spent together benefits the mother-child relationship, in addition to stimulating the child. Besides, play that promotes interaction with humans, objects, or events assists a child's mental strength and resilience.<sup>27</sup> Play sessions between mother and child would also improve maternal attitudes towards child stimulation.<sup>28</sup>

This study identified some of the difficulties faced by mothers in a coastal-highland region of a small island in Eastern Indonesia. Our results may apply to broader communal societies. However, our subjects were mothers who were actively involved in pediatric community health service programs. Thus, we cannot generalize our results to less involved mothers.

In conclusion, the barriers identified in our study give us a starting point to formulate recommendations

for Tidore families and families from similar populations. The communal society provides both benefits and disadvantages for mothers in stimulating child development. A major benefit is that everybody has a feeling of responsibility in taking care of child health. The disadvantage, especially for women, is that they are unable to assert their health-related decisions. The health intervention program should reach grandparents, fathers, elder siblings, and even extended society in various institutions, not only mothers. Multiple stakeholders are tasked to provide a supportive environment for child development, including safety, health access, information access, women's empowerment, and the well-being of working parents, because community roles cannot be isolated from parental roles in child development.

### Conflict of interest

None declared.

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