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Mothers' Knowledge on Motor Development Stimulation in Toddlers at Puskesmas Kota Utara

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ABSTRACT

Toddler age is considered part of the golden age, a crucial period for achieving optimal intellectual growth and development. During this stage, the rate of physical growth begins to slow, while motor development progresses significantly. Parental knowledge regarding developmental stimulation can influence the effectiveness of such stimulation. The purpose of this study was to describe mothers' knowledge of motor development stimulation in toddler-aged children within the working area of Puskesmas Kota Utara. This research employed a quantitative method with a descriptive research design. The study population consisted of mothers with toddler-aged children. A total of 115 respondents were selected using a total sampling technique. The results showed that 73 respondents (63.5%) had a low level of knowledge, while 42 respondents (36.5%) demonstrated a good level of knowledge regarding motor development stimulation. It can be concluded that most mothers had limited knowledge, indicating the need for health professionals at the Public Health Center to provide health promotion interventions through educational activities aimed at improving maternal understanding of motor development stimulation.

1. INTRODUCTION

Toddler-aged children are defined as those between 12 to 36 months (1 to 3 years old). This age group falls within the so-called "golden age" of development, which is considered a crucial period for achieving optimal physical growth and intellectual development (Ratnaningsih, Indatul, & Peni, 2017). This phase marks a critical window of opportunity during which children are highly responsive to environmental stimuli. It is also a stage of intensive environmental exploration, as toddlers are naturally curious and driven to understand how things around them work. During this time, children experience extremely rapid developmental progress (Ni Ketut, 2019).

The golden age, spanning from birth to five years, is especially critical for various domains of child development, including motor development. During this period, gross motor skills such as sitting and walking typically develop first, followed by the refinement of fine motor skills such as grasping and drawing. These developmental milestones are heavily influenced by environmental stimulation, particularly from mothers or primary caregivers. Insufficient stimulation during this period can significantly hinder the child's motor development (Suwardi, 2021).

Developmental delays are a global concern. In the United States, the prevalence of developmental delays ranges from 12% to 16%. In Thailand, it is approximately 24%, and in Argentina, about 22%. In contrast, Indonesia has a significantly higher rate, with around 29.9% of children experiencing developmental delays. UNICEF (2019) reported that the prevalence of motor development disorders in Indonesian children under five years is alarmingly high, with about 27.5% or nearly 3 million children experiencing such disorders. Similarly, the World Health Organization (WHO, 2018) reported that the prevalence of growth and developmental disorders among children under five globally is about 28.7%, with Indonesia ranking as the third-highest country in Southeast Asia for such issues.

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According to data from the Gorontalo Provincial Health Office, the total number of toddlers in Gorontalo Province in 2024 was 10,997. Among the six regencies and cities that make up the province, Gorontalo City ranks second in terms of the highest number of toddlers, with a total of 19,425 in 2024. Within Gorontalo City, the region with the highest number of toddlers experiencing developmental delays was the working area of the Kota Utara Public Health Center (Puskesmas Kota Utara), which reported 32 such cases (Dinas Kesehatan Provinsi Gorontalo, 2021).

The issue of child growth and development deserves serious attention, as children represent the future human capital of Indonesia. In the toddler phase (ages 1–3 years), while the rate of physical growth begins to slow down compared to infancy, there is notable progress in motor development (Bata et al., 2023). During this stage, children begin to exhibit increased physical activity and show signs of advanced motor skills. They are more mobile, display heightened curiosity, and are eager to explore objects and their surroundings (Atik, 2023). Motor development refers to the progression of body movement, in which the brain acts as the central control system coordinating with muscles and nerves to produce movement. This developmental process enables children to perform movements ranging from basic to more complex tasks. Motor development is generally categorized into two types: gross motor skills and fine motor skills (Khadijah & Amelia, 2020).

To ensure that children grow and develop optimally, proper care and nurturing from individuals in the child's immediate environment particularly parents is essential. In most Indonesian households, the caregiving role tends to be primarily undertaken by mothers. Parents, especially mothers, play a pivotal role in meeting the developmental needs of their children, including providing appropriate stimulation (Rantina, Hasmalena, & Nengsih, 2020). Several factors influence how well a parent, particularly a mother, is able to provide developmental stimulation. These factors include the mother's level of education, knowledge, employment status, availability of social support, and access to necessary resources. Mothers with higher levels of education generally possess better knowledge and are more capable of providing appropriate developmental stimulation. Conversely, working mothers may face challenges related to limited time and energy, which can hinder their ability to consistently stimulate their children (Misniarti & Haryani, 2022). According to Saadah, Kp, Suparji, and Sulikah (2020), a lack of adequate stimulation can result in delayed motor development in children. When children do not receive the stimulation their brains require, they may experience difficulties or delays in acquiring motor milestones such as sitting, standing, walking, grasping objects, and even writing. These delays can significantly impact their ability to perform everyday physical activities.

The role of parents is therefore vital in ensuring optimal child development. Stimulation plays an important part in facilitating this development, and parental knowledge about stimulation significantly influences its success (Irwan, 2017). According to Bolon (2021), when mothers acquire proper knowledge, they become aware, willing, and capable of engaging in health-promoting behaviors. This leads to improvements in physical, mental, and social health and supports economic and social productivity by enabling behavioral change. Hence, maternal knowledge regarding stimulation has a significant effect on a child's developmental trajectory, especially motor development. This is supported by findings from a study by Hutagalung, S.ST, Manik, and S.ST (2024), which found a significant relationship between maternal knowledge of early stimulation and motor development in children aged 6–24 months. The study found that children whose mothers had low knowledge of early stimulation were at a higher risk of experiencing suspected motor delays.

Preliminary observations conducted in the working area of Puskesmas Kota Utara on September 25, 2024, revealed that 4 out of 6 interviewed mothers admitted to not knowing about motor development stimulation in toddler-aged children. They expressed that they had no understanding of how to stimulate their child's development and only praised their children when they managed to do something on their own. Some mothers also mentioned that they rarely played with their children due to time constraints caused by work and other personal activities. Of the six mothers interviewed, only two stated that they had knowledge of stimulation and actively applied it particularly motor stimulation with their children. Examples included

encouraging their children to grasp pencils, pick up small objects, stack cubes, sit, stand, walk, and even run without falling or parental assistance. These initial findings indicate that a considerable proportion of mothers in the area lack adequate knowledge or practices related to motor development stimulation. Therefore, further research is needed to thoroughly assess the level of maternal knowledge regarding motor development stimulation in the working area of Puskesmas Kota Utara. Based on the description above, the researcher is interested in conducting a study entitled "An Overview of Mothers' Knowledge on Motor Development Stimulation in Toddlers at Puskesmas Kota Utara."

2. METHOD

This study employs a quantitative research methodology using a descriptive research design to systematically observe, describe, and analyze the characteristics of the population under study without manipulating any variables (Irwan, Km, & Kes, 2017). The aim of descriptive research in this context is to provide an accurate and comprehensive overview of maternal knowledge regarding motor development stimulation in toddler-aged children.

The population in this study consists of mothers who have toddler-aged children, specifically those residing in the working area of the North City Public Health Center (Puskesmas Kota Utara) in Gorontalo City. This population was selected based on the consideration that mothers play a central role in the early stimulation of child development, especially during the toddler years, a period that is crucial for motor development.

To determine the participants for this study, the researcher used a total sampling technique, a non-probability sampling method in which all members of the population who meet the inclusion criteria are selected as research subjects. In this study, the total number of mothers who have toddler-aged children in the working area of Puskesmas Kota Utara was relatively small and manageable, making it feasible to include the entire population as the sample.

As a result, a total of 115 respondents were included in the study. These respondents represent all mothers within the specified area who have children aged 1 to 3 years old (toddler age). The use of total sampling ensures that the data collected reflects the complete spectrum of maternal knowledge in this population, allowing the findings to be more representative and accurate. Furthermore, by involving the entire population, the study minimizes sampling bias and enhances the validity and reliability of the research results.

3. RESULT AND DISCUSSION

Table 1. Respondent Characteristic Based on Age

No	Age	Frequency (n)	Percentage (%)
1	17-25 years (late adolescence)	28	24.4%
2	26-35 years (early adulthood)	85	73.9%
3	36-45 years (late adulthood)	2	1.7%
	Total	**115**	**100%**

The majority of respondents were aged between 26 and 35 years (early adulthood), accounting for 85 individuals (73.9%). The smallest age group was those aged 36–45 years, comprising only 2 respondents (1.7%).

Table 2. Respondent Characteristic Based on Occupation

No	Occupation	Frequency (n)	Percentage (%)
1	Housewife (IRT)	109	94,8%
2	Honorary Worker	4	3.5%
3	PNS	2	1.7%
	Total	**115**	**100%**

Most respondents were housewives, with 109 individuals (94.8%), indicating that the primary caregivers in this study were not formally employed.

Table 3. Respondent Characteristic Based on Education Level

No	Education Level	Frequency (n)	Percentage (%)
1	Elementary School	39	33.9 %
2	Junior High School	42	36.5 %
3	Senior High School	26	22.6 %
4	Bachelor's Degree	8	7.0 %
	Total	**115**	**100 %**

The most common education level among respondents was Junior High School (36.5%), followed by Elementary School (33.9%). Only a small portion of respondents (7.0%) held a Bachelor's degree

Table 4. Respondent Characteristic Based on Child's Age

No	Child's Age	Frequency (n)	Percentage (%)
1	1 year	47	40.9 %
2	2 years	59	51.3 %
3	3 years	9	7.8 %
	Total	**115**	**100%**

The majority of respondents had 2-year-old children, totaling 59 (51.3%), indicating that most of the data gathered reflect experiences with children at this developmental stage.

Table 5. Respondent Characteristic Based on Exposure to Information

No	Child's Age	Frequency (n)	Percentage (%)
1	No	73	63.5 %
2	Yes	42	36.5 %
	Total	**115**	**100%**

A large proportion of mothers (63.5%) reported not having received any information regarding motor development stimulation, highlighting a significant gap in maternal awareness and access to developmental education resources.

Table 6. Moters' Knowledge Level on Motor Development Stimulation in Toddler at Puskesmas Kota Utara

No	Knowledge Level	Frequency (n)	Percentage (%)
1	Good	42	36.5 %
2	Poor	73	63.5 %
	Total	**115**	**100%**

Based on the data presented in Table 6, the majority of mothers 73 out of 115 respondents (63.5%) had a poor level of knowledge regarding motor development stimulation for toddler-aged children. This indicates a significant gap in awareness and understanding among mothers about how to appropriately support their child's motor development during this crucial growth phase. Based on the findings of the study conducted in the working area of Puskesmas Kota Utara, it was revealed that among 115 participating mothers who had toddler-aged children, the majority demonstrated a low level of knowledge regarding motor development stimulation. Specifically, 73 respondents, or 63.5%, were categorized as having insufficient knowledge. This conclusion was drawn from the results of the knowledge questionnaires distributed to the mothers, in which those with lower scores were only able to answer 50% or fewer of the statements correctly. These scores indicate a general lack of understanding about the importance and methods of motor development stimulation during the toddler years.

Further analysis of the data revealed a strong correlation between educational attainment and the level of knowledge. Among the 73 mothers identified as having poor knowledge, most had low levels of education, with 39 having completed only elementary school (SD) and 42 having completed junior high school (SMP). This aligns with the theory proposed by Chusniah

Rachmawati (2019), which states that one of the primary factors influencing a person's knowledge is their individual characteristics, particularly education level. Education plays a crucial role in the development of mental capacities, attitudes, and behaviors that support the learning process and the absorption of information. In essence, individuals with lower levels of formal education tend to have limited access to diverse information, fewer opportunities to engage with new ideas and technologies, and therefore, a narrower worldview and more restricted knowledge base (Tri, 2019). These findings are also consistent with the results of a study conducted by Nursa'iidah (n.d.), which confirmed that mothers with lower educational backgrounds tend to have less knowledge about child development. The study also found that mothers with higher levels of education were 0.145 times more likely to possess a good level of knowledge compared to those with lower educational backgrounds. This statistical insight reinforces the significant role education plays in shaping maternal awareness and behavior regarding child development practices.

In contrast, the same study in Puskesmas Kota Utara showed that 42 respondents (36.5%) had a good level of knowledge regarding motor development stimulation in toddlers. These mothers demonstrated their understanding by correctly answering more than 50% of the questionnaire items. A closer look at their backgrounds showed that this group predominantly consisted of mothers with higher levels of education, 26 of them had completed senior high school (SMA), and 8 held a bachelor's degree (S1). According to the theory presented by Pakpahan et al. (2021), there is a close relationship between education and knowledge: the higher an individual's education, the broader and deeper their knowledge tends to be. With higher education comes improved cognitive ability, a greater ease in accessing and processing information, and an increased capacity to apply that knowledge in practical settings.

This is further supported by the findings of Misniarti and Haryani (2022), who reported that among 69 respondents, the majority of those with good knowledge about child development stimulation were mothers with senior high school (35 respondents) or college/university education (13 respondents). The study found that 47% of these better-educated respondents had a strong understanding of stimulation practices for toddlers. In general, individuals with higher educational qualifications are more likely to understand the learning content, grasp strategies for implementation, and effectively apply their knowledge in day-to-day interactions with their children. Beyond education, another important factor that influenced maternal knowledge in this study was access to information. Mothers who demonstrated good knowledge about motor development stimulation were more likely to have received information from various sources, such as health workers, media, or close relatives. On the other hand, mothers with low knowledge levels typically had not received such information from any source. This observation is in line with the theory of Sisy Rizkia (2020), who argues that exposure to information significantly influences an individual's knowledge. Regular exposure to educational content increases one's knowledge and broadens their perspective, while a lack of exposure results in stagnant or minimal growth in knowledge and awareness. This theory is further validated by the research of Sri and Susanti (2022), which established a statistically significant relationship between information exposure and maternal knowledge. Their study found that mothers who received relevant information regardless of the source were more likely to have better knowledge about child development. These findings emphasize the importance of effective health communication, the role of health professionals, and the dissemination of child development education through accessible and engaging platforms to increase awareness among mothers, particularly those with limited educational backgrounds.

4. CONCLUSION

This study aimed to explore the level of maternal knowledge regarding motor development stimulation in toddler-aged children within the working area of Puskesmas Kota Utara. The results indicated that the majority of mothers 73 out of 115 respondents (63.5%) had a low level of knowledge about motor development stimulation. These findings highlight that many mothers still do not fully understand the importance of stimulation as a critical component

in supporting a child's growth and development, particularly during the golden age. This lack of knowledge can result in children not receiving adequate stimulation, which may hinder both gross and fine motor development. Therefore, continuous educational efforts by healthcare professionals are needed through counseling and health promotion programs to ensure that mothers are equipped to provide age-appropriate and developmentally supportive stimulation for their children.

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