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# The effect of stimulation assistance through booklet media on the development of preschool-aged children

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**ABSTRACT**

Suboptimal growth and development in children can have adverse effects on health. This study aimed to determine the effect of developmental stimulation assistance using booklet media on the development of preschool-aged children in the working area of Samudra Public Health Center. This research was a quasi-experimental study using a one-group pretest-posttest design. The sample consisted of 23 mothers with children aged 4–5 years, selected using accidental sampling. The research instruments included a questionnaire, the KPSP (Pre-Screening Developmental Questionnaire), and a booklet. Data were analyzed using the Wilcoxon test. The results showed that family assistance using booklet media had a significant effect on both child development (p = 0.000) and maternal knowledge (p = 0.000). The study concludes that developmental stimulation assistance through booklet media significantly affects both the developmental status of preschool-aged children and maternal knowledge.



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# INTRODUCTION

The process of human growth and development begins from the fetal stage in the womb and continues into adulthood, influenced by various interrelated aspects, including cognitive, physical, and psychosocial aspects. The cognitive aspect involves the study of attention, memory, problem-solving, thinking processes, and reasoning (including moral reasoning, creativity, and language) (Anggaraeningsih & Yuliati, 2022; Aristi et al., 2021).

Children are the next generation of a nation; therefore, it is essential to ensure that they are of good quality to achieve a bright and prosperous future for the nation. A well-developed child must have a healthy and optimal growth and development process. Although child growth and development can occur naturally, the process largely depends on the role of parents (Prihatini et al., 2023; Suprayitno et al., 2021).

United Nations Children's Fund (UNICEF) indicates that more than one-third of children under five in developing countries experience growth and developmental issues that are not in accordance with their age. This is caused by several factors, including poverty, malnutrition, and

an unresponsive environment in stimulating the child's developmental process. Research on the factors contributing to developmental delays in children shows that approximately 80% of these delays are due to a lack of stimulation (Fadlyana et al., 2016; Rambe & Sebayang, 2020).

Motor development is the progression of maturity and control of body movements, which is closely related to the development of the motor centers in the brain. In line with increasing age, motor development gradually and continuously advances — from simple, unorganized, and unskilled movements to the mastery of complex and organized motor skills (Magdalena et al., 2022; Mayar & Sriandila, 2021). Children who experience developmental failure may struggle with socialization and face rejection from their peer groups, which can lead to psychological pressure, feelings of inferiority, and a sense of inadequacy that negatively affect their productivity (Utami & Ardhiasti, 2020).

Stimulation is the external provocation that comes from a child's environment. Children who receive targeted and consistent stimulation will develop more quickly compared to those who receive poor or no stimulation. Stimulation can be provided by people in the child's surroundings, including teachers, caregivers, family members, and especially the individuals closest to the child - the parents (Huru et al., 2022; Saputri et al., 2021).

Assistance (or facilitation) is an activity in community empowerment that involves assigning facilitators who act as facilitators, communicators, and motivators. Generally, assistance aims to develop communities by utilizing the various potentials they possess in order to achieve a better and more decent quality of life (Limbong & Amirudin, 2022).

Therefore, children of good quality are needed to achieve a bright and successful future for the nation. The process of child growth and development can occur naturally, but it largely depends on the role of parents. Research on the factors causing developmental delays in children shows that approximately 80% of these delays are due to a lack of stimulation (Saputra et al., 2021). Based on this, efforts are needed to help address developmental issues. One such effort is by stimulating children using booklet media (Sumiati & Tirtayani, 2021)(Sukmana et al., 2021)(Tika, 2021). Therefore, to support this, children need proper guidance to ensure optimal development. Based on this, it is necessary to take measures to help address developmental delays. One such effort is by stimulating children through the use of booklet media.

In addition to the role of parents in providing developmental stimulation, supporting media are needed to facilitate the delivery of information in a practical and sustainable manner. One effective medium is the booklet, as it can be read repeatedly and is easy for mothers to understand. The booklet functions not only as an educational tool but also as a practical guide for providing age-appropriate stimulation. Through booklets, mothers can better understand various aspects of child development including fine motor, gross motor, language, and cognitive skills as well as recognize developmental milestones that their children should achieve. Moreover, booklets help increase mothers' knowledge about appropriate stimulation methods, thereby helping to prevent developmental delays and promote optimal growth and development (Limbong & Amirudin, 2022).

A study conducted by Delima et al. found that the distribution of fine motor development in the pretest was 73.3% in the delayed category, which decreased to 16.7% in the posttest. For gross motor development, 66.7% of children were in the delayed category during the pretest, which decreased to 13.3% in the posttest. The study showed that providing health education using the *Manjujai* module had an effect on mothers' knowledge levels, as well as on the development of both fine and gross motor skills in children. In efforts to stimulate children's fine and gross motor development, the *Manjujai* module can serve as an effective alternative to support improvements in child development, particularly in motor skills (Delima et al., 2019).

# RESEARCH METHOD

This type of research is a quasi-experimental study using a one-group pretest-posttest design. In this design, the test is conducted twice — before (pretest) and after the experimental treatment is given (posttest). The population in this study consists of mothers and children aged 4–5 years within the working area of the Samudra Public Health Center. The sample in this study was selected using accidental sampling, in which the researcher took samples from subjects who happened to be present during the course of the study (Firdaus & Zamzam, 2018).

The method used for data collection in this study was a questionnaire. The questionnaire contained questions about the respondent's biodata, the mother's knowledge, and the assessment of child development using the KPSP (Pre-Screening Developmental Questionnaire). The intervention provided to the respondents involved stimulation using a booklet as the medium. Statistical analysis was conducted using the Wilcoxon test (Hidayat, 2014). This study was approved by the Research Ethics Committee of the Health Polytechnic of the Ministry of Health in Aceh with approval number: DP.04.03/12.7/126/2024, dated May 8, 2024.

# RESULTS AND DISCUSSIONS

**Research Results**

**Univariate Analysis**

**Table 1.** Frequency distribution of respondents' characteristics based on age, education, occupation, and child's age (n=23)

| Characteristics | | n | Percentage (%) |
|---|---|---|---|
| Age | 20-30 years | 12 | 52,2 |
| | 31-40 years | 8 | 34,8 |
| | 41-50 years | 3 | 13 |
| Education | SMA/SMK | 18 | 78,3 |
| | D3/S1 | 5 | 21,7 |
| Occupation | Employed | 7 | 30,4 |
| | Unemployed | 16 | 69,6 |
| Child's age | 4 years | 16 | 69,6 |
| | 5 years | 7 | 30,4 |

Based on the table above, it is known that in terms of age characteristics, the majority of respondents are between 20–30 years old, accounting for 52.2%. In terms of education, most respondents have a senior high school/vocational high school education, totaling 78.3%. Regarding occupation, the majority of respondents are unemployed, amounting to 69.6%. For child age characteristics, most respondents have children aged 4 years, comprising 69.6%.

**Bivariate Analysis**

**Table 2.** The effect of child development stimulation assistance on mothers' knowledge

| | | N | Mean | Mean difference | Sig. |
|---|---|---|---|---|---|
| Knowledge | Pretest | 23 | 3.8696 | -4.13043 | 0,000 |
| | Posttest | 23 | 8.0000 | | |

Based on the table above, the average pretest score of mothers' knowledge about child development stimulation was 3.86, and the average posttest score increased to 8, with a mean difference of 4.13. The statistical test results showed a p-value of 0.000, indicating that the child development stimulation assistance had a significant effect on increasing mothers' knowledge about child development stimulation.

**Table 3.** The effect of child development stimulation assistance on child development

| | | N | Mean Rank | Sum of Ranks | Sig. |
|---|---|---|---|---|---|
| Child development Pretest- Posttest | Negative ranks | 0 | .00 | .00 | 0,000 |
| | Positive ranks | 23 | 12.00 | 276.00 | |
| | Ties | 0 | | | |
| | total | 23 | | | |

Based on the table above, the negative ranks show 0 respondents, indicating that no respondents experienced a decrease in developmental scores. The positive ranks show 23 respondents who experienced an increase in developmental scores, with an average improvement of 12 points. The statistical test resulted in a p-value of 0.000, indicating that the provision of child development stimulation assistance had a significant effect on improving children's developmental scores using the KPSP at Samudra Public Health Center.

**Discussions**

**The effect of child development stimulation assistance on child development**

The results of the study showed that all respondents experienced an improvement in their children's developmental scores after receiving child development stimulation assistance, with an average developmental score increase of 12. The test results indicated that there is an effect of providing child development stimulation on children's development scores as measured by the KPSP. Child development stimulation assistance is highly needed by parents to help stimulate their children's development and prevent questionable developmental progress.

Many parents still lack knowledge and understanding about age-appropriate developmental stimulation. Child development includes not only visible aspects such as gross motor skills and language but also fine motor skills, which must also be taken into consideration. Therefore, this child development stimulation assistance serves as a valuable source of information for mothers to observe, assess, and stimulate their children's development effectively.

According to the theory, stimulation is the external provocation that comes from a child's environment. Children who receive directed and consistent stimulation will develop more quickly compared to those who receive inadequate or no stimulation. Stimulation can be provided by individuals within the child's surroundings, including teachers, caregivers, family members, and especially the people closest to the child—the parents (Juniah & Wulandari, 2024; Setiawati et al., 2020).

Children's motor stimulation can be carried out by parents, educators, caregivers, and other adults. A booklet is a form of stimulation assistance method that provides examples of stages of child development and developmental exercises appropriate to the child's age. Examples of such therapy include playing with puzzles, inserting buttons into a coin bank, stacking blocks or towers, and other toys designed to stimulate children toward achieving specific developmental targets. Play therapy can enhance children's physical activity by engaging their motor skills (Triningsih et al., 2022).

A study conducted by Darwis stated that education through a role-play approach has an effect on mothers' ability to stimulate the motor development of children aged 6–24 months. Children's motor development must be properly stimulated to prevent questionable or delayed developmental progress (Darwis & Fitriani, 2021).

A study conducted by Delima et al. found that the distribution of fine motor development in the pretest was 73.3% in the delayed category, which decreased to 16.7% in the posttest. For gross motor development, 66.7% of children were in the delayed category during the pretest, which decreased to 13.3% in the posttest. The study showed that providing health education using the *Manjujai* module had an effect on mothers' knowledge levels, as well as on the development of both fine and gross motor skills in children. In efforts to stimulate children's fine and gross motor development, the *Manjujai* module can serve as an effective alternative to support improvements in child development, particularly in motor skills (Delima et al., 2019).

**The effect of child development stimulation assistance on mothers' knowledge**

The results of the study showed that the average pretest score of mothers' knowledge about child development stimulation was 3.86, and the average posttest score increased to 8, with a mean difference of 4.13. The statistical test yielded a p-value of 0.000, indicating that child development stimulation assistance had a significant effect on increasing mothers' knowledge about child development stimulation. Many parents still do not know how to stimulate their children's development due to a lack of information or a lack of motivation to seek out knowledge regarding child development. This child development stimulation assistance serves as a platform for parents to obtain information, improve their knowledge, and enhance their skills in stimulating children's motor development.

Knowledge is the result of knowing, which occurs after a person observes a particular object. Most of a person's knowledge is acquired through seeing and hearing. Knowledge plays an important role in shaping a person's attitudes and actions (Savitri et al., 2024).

The study conducted by Saputri et al. showed that health education using booklet media had an effect on mothers' knowledge about child development stimulation for preschool-aged children at the Lubuk Buaya Public Health Center in Padang City. This is because the booklet used during the health education was simple and easy for mothers to understand, and it could be read repeatedly, allowing mothers to gain a better understanding of child development stimulation (Saputri et al., 2021).

The study conducted by Aprianti et al. found that half of the respondents had a moderate level of knowledge before receiving health education, and all respondents had a good level of knowledge after the education was provided. Bivariate analysis showed that there was a significant effect of health education using module media on increasing knowledge about developmental stimulation, with a p-value of $0.003 \leq 0.005$ (Aprianti et al., 2024).

The study conducted by Mulyanti and Tatang showed a difference in knowledge scores before and after the health education intervention, with a score of 28.53 before and 10.00 after. It can be concluded that there is a significant difference in mothers' level of knowledge regarding growth and development stimulation in toddlers before and after receiving health education. It is recommended that mothers regularly monitor their toddlers' growth and development at the *posyandu* (integrated health service post), in order to support optimal child development.

# CONCLUSION

It can be concluded that there is a difference in mothers' level of knowledge regarding the stimulation of toddler growth and development before and after receiving health education. It is recommended that mothers regularly monitor their toddlers' growth and development at the *posyandu* (integrated health service post), so that the growth and development of toddlers can progress optimally.

The use of booklets to stimulate child development not only affects developmental progress but also has a psychological impact on the child. Children feel more loved, and parents become more sensitive to their children's responses. This strengthens the parent–child relationship and fosters more intensive communication from an early age, which in turn builds the child's self-confidence. It is hoped that the booklet can be utilized as a tool in delivering services to mothers of toddlers regarding developmental stimulation and can also be incorporated into posyandu (integrated health service post) activities at the village level.

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