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Effect of Poster and KIA Book Education on Mothers' Knowledge of Father Involvement in Toddler Development

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Abstract

Purpose: The purpose of this study is to determine the effect of health education using poster media and the Mother and Child Health (KIA) Book on mothers' knowledge regarding father involvement in supporting the growth and development of toddlers. **Methods:** This study employed a pre-experimental design with a one-group pretest–posttest approach. The subjects consisted of 63 mothers with toddlers in Kersamenak Village, Kawalu District, Tasikmalaya City, selected using a purposive sampling technique. Health education was delivered through poster media and the KIA Book, focusing on the role of fathers in childcare and child development. Data were collected using a questionnaire to measure mothers' knowledge before and after the intervention. Data analysis was conducted using a paired sample t-test with a significance level of $\alpha = 0.05$. **Results:** The results showed a significant improvement in mothers' knowledge after the health education intervention. The average knowledge score increased following the intervention. Statistical analysis revealed a p-value of 0.000 ($p < 0.05$), indicating a significant effect of health education using poster media and the KIA Book on improving mothers' knowledge regarding father involvement in toddler growth and development. **Conclusions:** Health education using poster media and the KIA Book is effective in increasing mothers' knowledge about the role of fathers in supporting child growth and development. Therefore, continuous implementation of this intervention is recommended in posyandu activities and community health center programs to strengthen family involvement in optimizing child development.

Keywords: Father's role, growth and development, health education, maternal knowledge, toddlers

Introduction

Child growth and development constitute an essential stage that determines the quality of human resources in the future. This process not only includes physical growth but also the development of motor, cognitive, language, social, and emotional aspects that occur

continuously from the prenatal period to early childhood (Sukamto et al., 2025). The First 1,000 Days of Life (HPK) represent a critical period because rapid brain development occurs during this phase and is highly sensitive to nutritional intake, stimulation, and parenting patterns within the family. Disruptions that occur during this period may lead to long-term impacts on health status, intellectual capacity, and individual productivity later in life (Indrayani & Khadijah, 2020).

In Indonesia, one of the growth and development problems that remains a serious concern is stunting (Rahayu et al., 2022). Stunting not only indicates impaired physical growth due to chronic malnutrition but is also associated with delays in cognitive development and the social-emotional aspects of children. Although the national prevalence of stunting has shown a decreasing trend, the rate still falls within the category of a public health problem. Therefore, promotive and preventive efforts are needed, involving the family as the primary unit of childcare (Sukmawati et al., 2020).

Optimizing child growth and development does not solely depend on the role of mothers as the primary caregivers but also requires the active participation of fathers . The concept of father involvement proposed by Michael E. Lamb includes direct interaction with the child (*engagement*), presence and accessibility in the child's life (*availability*), and responsibility in caregiving (*responsibility*). Positive father involvement has been shown to contribute to children's motor and cognitive development as well as their emotional stability. However, in practice, fathers' participation in childcare in Indonesia is still not optimal and is often influenced by perceptions and the level of mothers' knowledge, as mothers tend to play a more dominant role in managing daily childcare(Davis-Kean et al., 2021).

Knowledge plays an important role in shaping an individual's health attitudes and behaviors. Therefore, health education is considered a strategic approach to improving mothers' understanding of the importance of child growth and development as well as the collaborative roles of mothers and fathers in childcare. The use of educational media such as the Mother and Child Health Book (KIA Book) and posters can facilitate the delivery of information in a more systematic, engaging, and easily understandable manner(Kartasurya & Sriatmi, 2022).

Based on data from the working area of the Kawalu Community Health Center, Kersamenak Village is among the areas with a relatively notable number of cases related to growth and developmental disorders among toddlers. Preliminary observations indicate that participation in *posyandu* activities is still dominated by mothers, while fathers' involvement in monitoring child growth and providing developmental stimulation remains relatively low. This condition indicates the need for an educational intervention that not only improves mothers' knowledge but also encourages greater father involvement in the parenting process.

Based on these issues, this study aims to analyze the effect of health education through the KIA Book and poster media on increasing mothers' knowledge regarding father involvement in the growth and development of toddlers in Kersamenak Village, Kawalu District, Tasikmalaya City. The findings of this study are expected to serve as a foundation for strengthening family health education programs at the *posyandu* and community health center levels in order to support the sustainable optimization of child growth and development.

Methods

This study employed a pre-experimental design with a quantitative approach using a one-group pretest–posttest design. This design was used to measure changes in mothers' knowledge levels before and after the health education intervention within a single group of respondents without a comparison group. The research was conducted in the working area of

the Kawalu Community Health Center, specifically in Kersamenak Village, Kawalu District, Tasikmalaya City, from October 2025 to January 2026. The study population consisted of all mothers with children under five years of age (0–59 months) registered in the area, totaling 1,349 individuals. The sample size was determined using the Slovin formula with an error rate of 12%, resulting in 63 respondents. The sampling technique used was purposive sampling, based on previously established inclusion and exclusion criteria.

The inclusion criteria were mothers who had children under five years of age, actively participated in *posyandu* activities, were willing to become respondents, and were able to read and write. The exclusion criteria included mothers who did not complete all stages of the study, either the pretest or posttest, or those who withdrew during the research process. Data were collected using a knowledge questionnaire consisting of 24 dichotomous questions (correct answers scored 1 and incorrect answers scored 0), resulting in a total score ranging from 0–24, which was then converted into a 0–100 scale. The research instrument had undergone validity and reliability testing on 30 respondents outside the study sample. The test results showed that all question items were valid (r calculated > r table = 0.361) and demonstrated good reliability, indicating strong internal consistency of the instrument.

The intervention provided was health education regarding child growth and development and the importance of father involvement in parenting, delivered through the Mother and Child Health Book (KIA Book) and educational posters. The pretest was conducted before the educational session, while the posttest was administered 15–30 minutes after the intervention to assess the immediate effect of the health education.

Data analysis was conducted using univariate analysis to describe the distribution of respondents' knowledge levels and bivariate analysis using the paired sample t-test with a significance level of $\alpha = 0.05$ to determine differences in knowledge scores before and after the intervention. This study received ethical approval from the Health Research Ethics Committee of the Faculty of Health Sciences, Universitas Muhammadiyah Tasikmalaya, and permission from the Kawalu Community Health Center and the Kersamenak Village Government. All respondents provided written consent through an informed consent form before participating in the study.

Results

This study involved 63 mothers with children under five years of age in Kersamenak Village, Kawalu District, Tasikmalaya City. The analysis was conducted to identify changes in mothers' knowledge levels before and after receiving health education regarding child growth and development and the involvement of fathers in parenting.

Based on the univariate analysis**,** the average knowledge score of mothers before the intervention **(**pretest**)** was 64.12 with a standard deviation of 8.45**.** After receiving health education using the Mother and Child Health Book (KIA Book**)** and posters, the average knowledge score increased to 82.37 with a standard deviation of 7.91. These findings indicate an increase in the average level of mothers' knowledge following the intervention. The comparison between pretest and posttest mean scores was also illustrated using a bar chart showing a visual increase in scores.

The bivariate analysis using the paired sample t-test showed a statistically significant difference between the pretest and posttest scores. The mean difference in knowledge scores before and after the intervention was 18.25 points. The statistical test produced a p-value of 0.000 ($p < 0.05$)**,** indicating a significant difference in mothers' knowledge levels before and after the health education intervention. Overall, the results demonstrate that the health

education intervention was associated with an increase in mothers' knowledge regarding father involvement in the growth and development of toddlers**.**

Discussion

The results of this study indicate a significant increase in the average knowledge score of mothers after receiving health education using the Mother and Child Health Book (KIA Book) and posters. These findings suggest that structured educational interventions can improve mothers' understanding of child growth and development as well as the importance of father involvement in parenting. These results are consistent with previous studies reporting that health education using educational media such as booklets, posters, and audiovisual materials is effective in improving mothers' knowledge related to developmental stimulation in toddlers (Muntafiah et al., 2021)(Nafilah & Eliyana, 2024).

Maternal knowledge is one of the key determinants in supporting optimal child growth and development. A good level of understanding influences daily parenting practices, including early detection of developmental disorders, providing age-appropriate stimulation, and fulfilling children's basic needs comprehensively. Research by Syahailatua and Kartini (2020) found a significant relationship between maternal knowledge and the development of children aged 1–3 years ($p < 0.05$**).** Therefore, improving maternal knowledge through health education may have a positive impact on the quality of child growth and development.

The effectiveness of health education in this study can also be explained by the use of easy-to-understand visual media. Educational tools such as posters and the KIA Book help simplify information, clarify health messages, and improve respondents' recall of the material presented. Systematic and communicative educational approaches have been shown to enhance understanding within a relatively short time, as reported in the study by Susanti Tria Jaya et al. (2025)**.** This finding further supports the idea that visual print media can be an effective means of conveying messages regarding the importance of father involvement in toddler care(Kartasurya & Sriatmi, 2022).

Although the intervention in this study primarily targeted mothers, various international studies emphasize that father involvement plays a significant role in children's health and development**.** Fathers' participation in parenting is associated with children's emotional, cognitive, and social development through social determinants within the family environment. Furthermore, the study by Mariani and Suratmi (2022**)** reported that health programs involving both parents tend to produce better outcomes compared to interventions targeting only one parent, particularly in infant care practices and breastfeeding support. Therefore, increasing mothers' knowledge about the importance of fathers' roles may serve as an initial step in encouraging more balanced parenting collaboration.

The findings of this study have important implications for public health programs**.** Health education has proven to be an effective promotive strategy for increasing mothers' knowledge capacity, which may subsequently influence parenting behaviors. In the context of primary health services, *posyandu* and community health centers should integrate educational materials related to father involvement as part of family health education. A sustainable family-based approach**,** accompanied by indicators of father participation, is expected to have a more comprehensive impact on optimizing toddler growth and development.

However, this study has limitations because it used a one-group pretest–posttest design without a control group**,** which means that the influence of external factors cannot be fully eliminated. Future studies are recommended to use randomized controlled trials or quasi-

experimental designs with longer observation periods to evaluate the long-term effects of health education on parenting behavior changes and child development outcomes more objectively.

The findings also indicate that the level of maternal knowledge before the intervention was in the moderate category**,** with a mean score of 64.12. This suggests that most respondents already had basic knowledge about child growth and development; however, their understanding was not yet comprehensive, particularly regarding the importance of father involvement in parenting. This suboptimal knowledge level may be influenced by several factors, including maternal education level, access to health information, parenting experience, and participation in educational activities at *posyandu*. Literature over the past decade indicates that education level and exposure to health information are significantly associated with mothers' ability to understand developmental stimulation and early detection of child developmental disorders (WHO, 2020; Indonesian Ministry of Health, 2021). Additionally, limited understanding of fathers' roles is also influenced by socio-cultural constructions that traditionally position fathers as the primary breadwinners, which limits their participation in monitoring child growth and development.

After the health education intervention using the KIA Book and posters, the average knowledge score increased to 82.37**,** indicating a significant improvement in mothers' understanding of child growth and development as well as the urgency of father involvement in parenting. The effectiveness of this intervention can be attributed to the use of visual media combining text and images**,** making health messages clearer, more systematic, and easier to understand. Studies published in public health journals indexed in DOAJ and Scopus have reported that health education based on visual and printed media produces greater improvements in knowledge scores compared to conventional lecture methods (UNICEF, 2022; Global Health Promotion, 2019). Therefore, structured interventions even when conducted within a relatively short period can produce immediate improvements in respondents' understanding.

The paired sample t-test analysis showed a p-value of 0.000 ($p < 0.05$), indicating a significant effect of health education on improving maternal knowledge. The mean score difference of 18.25 points reflects a meaningful change both statistically and practically. This finding aligns with health behavior change theories, which state that increased knowledge represents the initial stage in the formation of attitudes and behavioral change. Health education acts as a cognitive stimulus that strengthens rational understanding before individuals implement it in real actions. Several international studies published in Journal of Child and Family Studies and BMC Public Health (2018–2023**)** also report that family-based educational interventions contribute to improved parenting quality and early childhood development. Overall, the findings confirm that health education using appropriate media is an effective strategy for improving maternal knowledge capacity**,** which can ultimately serve as a foundation for encouraging father involvement and optimizing child growth and development.

Conclusion

This study demonstrates that mothers' knowledge regarding father involvement in the growth and development of toddlers before receiving health education was categorized as moderate**,** with an average score of 64.12**.** This condition indicates that mothers' understanding of fathers' roles in parenting was not yet optimal. After the health education intervention using the Mother and Child Health Book (KIA Book) and posters, the average knowledge score increased to 82.37**,** which falls into the good category.

The results of the paired sample t-test showed a p-value of 0.000 ($p < 0.05$), indicating a significant difference between knowledge scores before and after the intervention. Therefore, health education has been proven effective in improving mothers' knowledge regarding the importance of father involvement in supporting child growth and development. This intervention has the potential to become a promotive strategy to strengthen family roles in the parenting of toddlers.

Recommendations

Based on the findings of this study, health education regarding father involvement in parenting should be systematically integrated into primary health care programs. Community health centers and health workers are encouraged to incorporate this material into *posyandu* activities, toddler mothers' classes, and family health education programs by optimally utilizing educational media such as the KIA Book and posters.

Posyandu cadres are expected to play an active role in encouraging father participation in monitoring child growth and development and providing continuous education to families about the importance of collaborative parenting. Additionally, parents both mothers and fathers should strengthen communication and cooperation in fulfilling children's basic needs, providing developmental stimulation, and monitoring growth and development. For future research, it is recommended to use controlled or quasi-experimental study designs to obtain stronger evidence. Long-term measurements are also necessary to evaluate changes in parenting behavior and their impact on child development more comprehensively.

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