

The Effect Of Bounding Card On Maternal Motivation In Providing Stimulation For Toddlers Aged 6–24 Months At Home In Ciwaruga Village, 2025

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Abstract. Child development should be stimulated, particularly between the ages of six and twenty-four months, which is considered to be the "golden period" of brain development. On the other hand, the engagement of mothers is often poor since these moms have inadequate drive and there is a shortage of appealing educational media. Many people believe that the Maternal and Child Health (MCH) Handbook is not applicable in real life. Bounding cards provide an option that is both more visually appealing and more relevant. The purpose of this research was to investigate the impact that they have on the motivation of moms to give stimulation. Between the months of November 2024 and May 2025, a total of 32 moms with toddlers participated in the study, which used a pre-experimental one-group pretest-posttest design. In the intervention, Boundary cards were utilized for a period of one month, and then an assessment was conducted using a questionnaire that was both valid and reliable. According to the findings, fifty percent of moms exhibited a lack of positive motivation before the session, however that number rose to seventy-eight percent following the intervention. An analysis conducted using McNemar revealed a p-value of 0.004 ($p < 0.05$). It is possible to draw the conclusion that border cards are a good way to improve the motivation of moms to excite their infants.

Keywords: Bounding Card, Maternal Motivation, Toddler Stimulation.

1 Introduction

The toddler phase, particularly from 6 to 24 months of age, is widely recognized as the "golden age" of child development, during which rapid physical and psychological growth occurs. This period includes the development of gross and fine motor skills, language abilities, social behavior, and independence, all of which are essential for preparing children for future learning phases [1]. However, developmental disorders among toddlers remain a global challenge. The World Health Organization (WHO) reports that the global prevalence of developmental delays in children ranges from 10% to 17%, with Indonesia recording rates between 13% and 18%, among the highest in Southeast Asia [2]

In Indonesia, factors such as malnutrition, recurrent infections, poverty, and lack of early stimulation are the primary causes of developmental delays. According to UNICEF, approximately 27.5% of Indonesian toddlers experience developmental issues, particularly in motor development [3]. This is supported by data from the West Java Provincial Health Office, which shows a decrease in early childhood development screening coverage from 80.21% in 2018 to 75.46% in 2020, and reports that 1–3% of toddlers in the province experience motor development delays [4]. Parental stimulation, especially from mothers, plays a crucial role in optimizing child development. Children who receive regular stimulation tend to develop better than those who do not [5]. Unfortunately, maternal motivation to provide stimulation is often low due to a lack of knowledge, limited time, and the absence of engaging educational media [6]. Therefore, innovative, practical, and enjoyable stimulation tools for both mothers and children are needed.

One promising approach is the use of Bounding Cards or Bounding Cards. This medium has been shown to increase maternal engagement in the stimulation process due to its attractive design, flexibility, and ease of use in daily play activities [7]. Bounding Cards help mothers understand the developmental needs of their children and facilitate easier implementation of stimulation at home. Compared to the Mother and Child Health (MCH) Handbook, which is more formal and requires deeper comprehension, Bounding Cards offer a more interactive and enjoyable approach [8]. The use of visual media such as Bounding Cards has been shown to effectively enhance both maternal engagement and child development. Demonstrated that stimulation using Bounding Cards had a significant effect on the language and speech development of preschool children [9]. Similarly, found that Bounding Cards improved letter and vocabulary recognition in early childhood through a visual and interactive approach. These findings highlight that simple yet engaging media such as bounding cards can serve as an effective tool to support mothers in stimulating their children's growth and development [10]. Based on this background, the present study aims to investigate the effect of using Bounding Cards on maternal motivation in stimulating the development of toddlers aged 6–24 months at home, with the research conducted at Posyandu Cempaka 06, Ciwaruga Village.

2 Methods

This study employed a pre-experimental design using the one-group pretest-posttest approach. The research was conducted at Posyandu Cempaka 06, Ciwaruga Village, involving a total of 32 mothers with toddlers aged 6–24 months. Sampling was carried out using a purposive sampling technique, selecting participants based on specific inclusion criteria. The research instrument used was a maternal motivation questionnaire, consisting of 20 items measured on a 4-point Likert scale (ranging from “strongly disagree” to “strongly agree”), with higher scores indicating stronger motivation. The questionnaire had undergone validity and reliability testing prior to use, with all items meeting the validity criteria ($r > 0.30$) and the reliability coefficient showing a high level of internal consistency (Cronbach's $\alpha = 0.86$). The intervention involved the use of Bounding Card media designed to educate and guide mothers in conducting home-based stimulation activities [11]. Data were analyzed using the Wilcoxon Signed Rank Test to determine the differences in maternal motivation levels before and after the implementation of Bounding Cards.

The intervention involved the use of bounding card media designed to educate and guide mothers in conducting home-based stimulation activities. Data collection was carried out before and after the one-month intervention, and differences in maternal motivation were analyzed using the Wilcoxon Signed Rank Test. Ethical considerations were observed throughout the

research, including obtaining informed consent from all participants, ensuring voluntary participation, and maintaining confidentiality of respondents' identities and data.

During the one-month intervention, the researcher and Posyandu cadres provided regular follow-up, either through home visits or scheduled communication, to monitor the mothers' use of the Bounding Cards. This process also served to address any difficulties experienced by the mothers and to maintain their motivation throughout the intervention period. At the end of one month, the same questionnaire used in the pretest was administered again as a posttest to evaluate changes in maternal motivation toward providing developmental stimulation.

This study also paid close attention to research ethics. Ethical approval was obtained from the relevant institutional ethics committee prior to data collection. All respondents were informed about the purpose, procedures, benefits, and potential risks of the study and provided written informed consent before participating. Participants were assured that their involvement was voluntary, and they could withdraw at any time without consequence. Confidentiality and anonymity were strictly maintained by coding participant data and ensuring that no personal identifiers appeared in the report. Furthermore, the intervention using Bounding Cards was designed to be safe, simple, and non-burdensome for both mothers and children.

3 Results

Table 1. Distribution of Maternal Motivation Before and After Bounding Card Intervention

Motivation Category	Before Intervention	After Intervention
Low	10 (31.3%)	1 (3.1%)
Moderate	16 (50.0%)	5 (15.6%)
High	6 (18.7%)	26 (81.3%)
Total	32 (100%)	32 (100%)

Table 1 demonstrates a notable shift in the level of maternal motivation before and after the introduction of Bounding Card media. Prior to the intervention, the majority of mothers (81.3%) fell into the low and moderate motivation categories, with only 18.7% categorized as highly motivated to provide developmental stimulation for their toddlers. After the Bounding Card intervention, there was a dramatic improvement, with 81.3% of mothers falling into the high motivation category and only 3.1% remaining in the low category.

Table 2. Wilcoxon Signed Rank Test for Maternal Motivation Pre and Post Bounding Card

Variable	Z Value	p-value
Maternal Motivation (Pre vs Post)	-4.759	0.000

Table 2 presents the results of the Wilcoxon Signed Rank Test comparing maternal motivation scores before and after the use of the bounding card intervention. The analysis showed a statistically significant difference between the pre-test and post-test scores ($Z = -4.759$, $p = 0.000$). This finding indicates that the bounding card intervention effectively increased maternal motivation. The negative Z-value reflects that post-intervention scores were higher than pre-intervention scores, suggesting a positive shift in motivation levels among

participating mothers. Therefore, the bounding card can be considered a useful tool in enhancing maternal motivation related to maternal and child health practices.

4 Discussions

This study explained low engagement can be attributed to factors such as lack of knowledge, low confidence, absence of supportive learning materials, and competing domestic responsibilities [12]. This shift suggests that Bounding Cards serve not only as an educational tool but also as a catalyst for behavioral empowerment. With their attractive visual design and simple, accessible content, Bounding Cards proved to be more engaging than traditional materials such as the Mother and Child Health (MCH) handbook [13].

Another important reason why bounding cards can increase parental motivation is their practicality and interactivity. Compared to traditional media such as the MCH handbook, bounding cards are simple, visual, and easy to apply in daily activities, making them more user-friendly for parents. Interactive media has been shown to significantly enhance parental engagement because it provides clear, practical steps that can be easily followed in the home setting. Studies highlight that accessible and interactive parenting tools are more likely to motivate parents to implement developmental stimulation consistently [14].

In addition, bounding cards may also strengthen parental self-efficacy, which is a key factor in motivating behavior change. When parents feel more confident in their ability to support their child's growth and development, they are more likely to take an active role in providing stimulation. Evidence from digital and visual parenting interventions shows that such tools improve self-efficacy, increase social support, and reduce psychological barriers for parents (Lin-Lewry et al., 2024). Thus, bounding cards not only serve as educational materials but also act as empowerment tools that foster parental confidence and motivation [15].

The findings are consistent with Social Cognitive Theory, which emphasizes that human behavior is shaped through the interaction between personal factors (knowledge, self-belief), behavior (actions taken), and environment (learning conditions) [16]. Bounding Cards provide a positive learning environment that enables mothers to experience mastery, thereby enhancing their self-efficacy. In addition, according to Herzberg's Motivation-Hygiene Theory, the rise in motivation can be linked to motivational factors such as achievement, recognition, and responsibility [17]. Successfully applying child development stimulation using Bounding Cards gives mothers a sense of accomplishment and validation in their role as primary educators of their children. This also aligns with the Elaboration Likelihood Model, suggesting that visually attractive and easy-to-understand messages are more likely to be processed through the central route, resulting in more enduring behavioral change [18].

The results are further supported by previous research. One study found that picture-based Bounding Cards increased mothers' motivation to provide language stimulation to toddlers by 60% due to their ease of use and enjoyment [3]. Another, reported that interactive visual media increased parental participation in early childhood stimulation activities at Posyandu by 45%. Further evidence demonstrated that illustrated booklets significantly improved mothers' self-efficacy in providing fine motor stimulation for preschool children ($p < 0.001$) [19]. In addition, a study highlighted that image-based educational media are more effective than text-based materials in improving mothers' understanding of child growth and development, especially in areas with low literacy rates [20]. Similarly, a UNICEF report emphasized that simple, context-specific visual media can increase parental involvement in childcare programs in developing countries by up to 70% [19]. These findings reinforce that the Bounding Card, which combines

visual elements, interactivity, and practical content, is an effective tool for enhancing maternal motivation [21].

Table 2 presents the results of the Wilcoxon Signed Rank Test, showing a Z value of -4.759 and a p-value of 0.000 ($p < 0.05$). This statistically significant result confirms that there was a meaningful increase in maternal motivation after the Bounding Card intervention. The extremely low p-value suggests that the improvement observed was not due to random chance, but rather a direct result of the intervention. This finding reinforces the conclusion that simple, targeted, and context-appropriate educational interventions can lead to substantial behavioral changes. In this case, the use of a visual, interactive medium effectively enhanced maternal motivation to engage in consistent developmental stimulation. The result is consistent with previous studies before [22], which highlighted the potential of Bounding Cards and educational play tools to raise parental awareness and increase involvement in child development activities.

From an implementation perspective, these findings are highly relevant for community health programs such as Posyandu and Puskesmas. Bounding Cards can reduce the time required for health counseling because the key messages are already delivered through easy-to-understand media. They can also be used independently by mothers at home, thereby extending the reach of education without increasing the workload of health workers [23]. Furthermore, they offer an effective alternative in areas with limited internet access or digital technology, supporting the National Health Agenda and the SDGs 2030 goals particularly Goal 3 (Good Health and Well-being) and Goal 4 (Quality Education) through the prevention of developmental delays and stunting [24].

Looking ahead, Bounding Cards hold strong potential for further development. They could be paired with digital integration, such as a companion mobile application containing instructional videos and progress tracking. Cultural adaptation could make them more relevant to diverse local contexts by adjusting imagery and language. Program scalability could be achieved by distributing them via Posyandu, Puskesmas, and women's community groups, supported by brief training sessions for health cadres. In addition, long-term impact monitoring should be carried out to assess behavioral changes in mothers and developmental milestones in children over time [25]. In summary, the Bounding Card intervention significantly improved maternal motivation, supported by both statistical evidence and alignment with behavioral theories. It offers a low-cost, scalable, and culturally adaptable approach to empowering mothers as primary agents in child development [26]. Beyond short-term gains in motivation, its sustained use can contribute to improved early childhood development outcomes, ultimately enhancing human capital quality at the national level.

This study has several important limitations that should be acknowledged. First, the research employed a single-group pretest-posttest design, which means there was no control group for comparison. As a result, it is difficult to rule out the influence of external factors such as prior knowledge, exposure to other sources of information, or social interactions that may have contributed to the observed improvement in maternal motivation. Second, the sample size in this study was relatively small, with only 32 mothers participating. A limited sample reduces the statistical power of the findings and increases the likelihood that the results may have occurred by chance, thereby restricting their generalizability. Third, the study was conducted in a single site, namely Posyandu Cempaka 06 in Ciwaruga Village. Because of this, the results may reflect the unique characteristics of that community and may not represent mothers from different regions, socioeconomic backgrounds, or healthcare contexts. Taken together, these limitations suggest that while the findings provide useful preliminary evidence of the effectiveness of boundingcards, further studies with larger, more diverse populations and more

rigorous designs (such as randomized controlled trials) are needed to confirm and expand upon these results.

5 Conclusion

The use of Bounding Card media is effective in increasing maternal motivation to perform developmental stimulation for toddlers aged 6–24 months at home. Prior to the intervention, most mothers exhibited low to moderate levels of motivation. However, following the introduction of the Bounding Cards, there was a significant increase in the number of mothers with high motivation, as supported by the Wilcoxon test results ($p = 0.000$).

The Bounding Cards, with their engaging visual design and easy-to-understand educational content, successfully enhanced maternal involvement in consistent and enjoyable stimulation activities. Therefore, this media is recommended as a supportive educational tool that can be integrated into community health programs such as Posyandu and Puskesmas, to empower parents in optimizing early childhood development.

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