Health Dynamics
eISSN: 3006-5518
Publisher: Knowledge Dynamics
DOI: https://doi.org/10.33846/hd20403

*Original Research*

# Effectiveness of Emo-Demo to Improve Knowledge and Skills in Stunting Prevention Behavior in Infants Aged 0–6 Months

**Ulva Noviana*, Mustofa Haris and Merlyna Suryaningsh**

Nursing Study Program, Noor Huda Mustofa University, Bangkalan 69116, Indonesia

**Article history**
Received: 28 February 2025
Revised: 9 April 2025
Accepted: 12 April 2025
Published Online: 28 April 2025

***Correspondence:**
Ulva Noviana
Address: JL RE Martadinata No 45, Mlajah, Bangkalan, Jawa Timur, Indonesia.
Email: ulvanhm@yahoo.com

**How to cite this article:** Noviana U, Haris M, Suryaningsh M. Effectiveness of Emo-Demo to Improve Knowledge and Skills in Stunting Prevention Behavior in Infants Aged 0–6 Months. Health Dynamics, 2025, 2(4), 149-159. https://doi.org/10.33846/hd20403



**ABSTRACT**

**Background:** Stunting is a persistent malnutrition issue caused by prolonged inadequate nutritional intake. The results of the preliminary study that was conducted found low stunting prevention behavior in infants aged 0-6 months in Jaddih Village. The objective of the research was to evaluate the efficiency of the Emo-Demo method in improve knowledge and skills in stunting prevention behavior. **Methods:** The research design was quasi-experimental. The independent variables was health education with the Emo-Demo method, and the dependent variables were knowledge, skills, and behavior. This study used questionnaires and statistical tests including the Wilcoxon test, paired sample t-test, independent t-test, Spearman Rank, and linear regression. **Results:** The Wilcoxon test obtained p=0.000<0.05, indicating a difference in knowledge before and after the Emo-Demo intervention. The paired sample t-test obtained p=0.000<0.05, indicating a difference in knowledge before and after the lecture intervention. A p-value of 0.000<0.05 was found, indicating a difference in skills before and after the Emo-Demo intervention. However, p = 0.083 > 0.05 indicated no significant difference in skills before and after the lecture intervention. The independent t-test showed significant differences in knowledge (p = 0.022) and skills (p = 0.021) between treatment and control groups. Spearman Rank analysis revealed significant correlations between knowledge and behavior (p = 0.047, r = 0.354), and between skills and behavior (p = 0.004, r = 0.494). Combined, knowledge and skills significantly influenced behavior (p = 0.046). **Conclusion:** The Emo Demo method is effective and efficient in increasing knowledge, skills and behavior related to stunting prevention care. Health workers and service facility staff are expected to help reduce stunting prevalence by promoting maternal preventive behaviors for infants aged 0-6 months through health education using the Emo-Demo method.

**Keywords:** Knowledge; behavior; growth disorders; prevention and control; skills

## 1. INTRODUCTION

Stunting is a persistent undernutrition problem caused by prolonged inadequate nutrient intake and the provision of food that does not meet nutritional needs, resulting in growth disorders in children, where their height is below the standard or shorter than expected for their age. The process of child growth and development can be during the golden age, also called the Golden Period, when it is maximized. This period is a crucial phase that lasts for the first 1000 days and only occurs once in a child's life, and it is the right time to stimulate children both in terms of growth and

development.[1]

The low behavior of mothers or caregivers in preventing stunting will increase the risk of children experiencing stunting. Based on research by Alqurishi et al.,[2] 71.1% of toddlers had incomplete immunization status; incomplete immunization can weaken toddler immunity, making them more susceptible to infections, which increase the risk of stunting. Children who are not immunized are 1.9 times more at risk of stunting. It was found that the percentage of families who do not use soap when washing their hands is high, which affects hygiene practices. One crucial aspect of maintaining children's health is proper hygiene. Washing hands with running water serves as a key indicator of an individual's commitment to clean living habits. Handwashing with running water is associated with the occurrence of stunting.[3] The results of research conducted by Dendy et al. explained that the elevated rate of exclusive breastfeeding remains suboptimal for children under two years old, which can increase the chances of stunting because breast milk contains lactose, fat, protein, minerals and vitamins that are useful for building and providing energy, and does not burden kidney function.[4] According to research conducted by Pramulya et al., infants who are not exclusively breastfedhave a 3.7 times higher probability of encountering stunted growth compared to babies who are exclusively breastfed.[5]

According to World Health Organization (WHO), Indonesia is among the three leading nations with the greatest occurrence in the Southeast Asia region (SEAR).[6] The results of the Indonesian Nutritional Status Survey (SSGI) in 2022 show that around 21.6% or 4.56 million toddlers in Indonesia are still experiencing stunting.[7] In 2023, the prevalence of stunting in the SKI findings was 21.5%. East Java stunting in 2022 was around 19.2%, ranking 25$^{th}$ out of 33 provinces (Ministry of Health, 2023).[8] In Bangkalan Regency, the stunting was 26.2%, ranking 6$^{th}$ out of 38 regencies. According to the Bangkalan Regency Health Service in January 2024, Jaddih Village had a stunting prevalence of 2.49% or 71 toddlers, while Bilaporah Village had a stunting incidence of 2.52% or 7 toddlers in 2022, which increased to 8.66% or 24 toddlers in 2023.

From the results of a preliminary study conducted on 20 respondents who had filled out a questionnaire on stunting prevention behavior for newborns aged 0-6 months, mothers with newborns aged 0-6 months, on July 12, 2024, in Bilaporah Village, Jhedih Health Center, the results showed that 55% provided complementary foods before the baby was 6 months old, with 10% given bananas, 15% giving steamed rice, 20% giving porridge, 20% giving water, 10% giving fruit juice, 30% giving formula milk, and 10% giving vegetable soup. Additionally, 45% of babies received exclusive breastfeeding for 6 months, 60% practiced PHBS (Perilaku Hidup Bersih dan Sehat or Clean and Healthy Living Behavior) in washing hands, and 60% carried out immunization. This shows the low of maternal behavior in preventing stunting in infants aged 0-6 months in Bilaporah Village.

According to Integrated Behavioral Model (IBM), five main factors influence behavior: knowledge and skills, behavioral resilience, intentions or decisions, environmental constraints, and habits. This theory explains that individuals are the most important targets of behavioral change and that intention, knowledge and skills play key roles, provided there are no serious environmental constraints. Research conducted by Hermawan et al. shows that knowledge about stunting behavior is related to the incidence of stunting and maternal attitudes toward stunting.[9]

Low levels of behavior in preventing stunting will increase the risk of children experiencing stunting, influenced by parental behavior. The risk of stunting increases if the baby is not immunized, leading to a higher risk of contracting infectious diseases, which in turn can decrease appetite and impair nutrient absorption, causing insufficient nutrient intake. Poor water facilities, sanitation, and unhealthy habits can lead to diarrhea, parasitic infections, or intestinal enteropathy, all of which affect the nutritional well-being of children, directly reducing appetite, impairing digestion, and influencing the introduction of complementary foods before six months of age in various forms such as fruit juice, formula milk, milk porridge, steamed rice, and strained steamed rice, which can cause digestive system disorders.[10] Furthermore, the possibility of dying in the first month of life is higher for babies who are not exclusively breastfed by their mothers.[11]

Efforts to improve the behavior of mothers or caregivers in preventing stunting through specific and sensitive nutritional interventions include increasing knowledge and experience and optimizing the role of integrated health posts. This can be done through counseling. One educational method that can be implemented effectively in the community to enhance public knowledge is the Emo-Demo method.

Respondents or targets of health promotion are better able to understand health information conveyed by facilitators using the Emo-Demo method. The method makes respondents more active and interactive with the facilitator thereby increasing their ability to accept the information. The reason is that the delivery of information to respondents is carried out simultaneously with practice or games, making it more enjoyable for respondents or targets of health promotion.[12] The Emo-Demo method does not only provide health information about preventing stunting, but also arouse emotions in pregnant women and mothers of toddlers. These emotions can motivate them to engage in behavioral change efforts to prevent stunting.[13]

Stunting is a form of chronic malnutrition with a high prevalence that has yet to meet the targeted reduction rate in Indonesia. According to the 2021 Nutrition Surveillance (PSG) data, stunting had the highest prevalence compared to other nutritional problems such as undernutrition, wasting, and overweight.[14] A review of journals and reputable literature shows that stunting negatively impacts cognitive development and academic performance. It can interfere with the maturation of brain neurons and alter brain structure and function, potentially causing permanent damage to cognitive development. This condition impairs children's thinking and learning abilities, ultimately reducing school attendance and academic achievement. Given the persistently high prevalence of stunting and its impact on cognitive development—which affects children's performance, productivity, and success in adulthood—further research is essential to prevent stunting in toddlers. The objective of this research was to evaluate the efficiency of the Emo-Demo method in improving knowledge and skills related to stunting prevention behavior in infants aged 0–6 months. This study demonstrates that Emo-Demo is an effective method and medium for enhancing caregivers' knowledge and skills regarding exclusive breastfeeding, immunization, and clean and healthy living behaviors to prevent stunting.

## 2. METHODS

### *2.1 Study Design*

This study used a quasi-experimental pretest-posttest design by implementing a two-group design. This type of quasi-experimental research is an approach carried out in a study involving at least two groups, namely the experimental group and the control group.

### *2.2 Study Population*

This research was conducted in Jaddih Village and Bilaporah Village. The population and statistical tests used a sample normality test (Shapiro-Wilk), with a total of 48 respondents and a sample of 32 respondents, selected using purposive sampling.

Inclusion criteria: 1) Mothers who have babies aged 0–6 months, 2) Mothers with babies aged 0–6 months who attend Posyandu (Pos Pelayanan Terpadu or Integrated Health Post for Child Health) in the villages of Bilaporah and Jaddih, Bangkalan. Exclusion criteria: 1) Mothers experiencing mental illness, 2) Mothers who are temporary residents.

### *2.3 Research Variable*

The independent variable in this study is health education using the Emo-Demo method in preventing stunting in infants aged 0–6 months. The dependent variables in this study are the knowledge, skills, and behavior of mothers in preventing stunting in infants aged 0–6 months in Bilaporah Village.

### *2.4 Data Collection*

The distributed questionnaire focused on stunting prevention in infants aged 0–6 months. The aid used was health education with the Emo-Demo method for preventing stunting in infants aged 0–6 months in Bilaporah Village.

Knowledge questionnaire: 5 questions (introduction of complementary feeding, exclusive breastfeeding, immunization, handwashing) adapted using the Integrated Behavior Model and modified by the researcher.

Skills questionnaire: 7 questions (introduction of complementary foods, exclusive breastfeeding, immunization, handwashing) adapted using the Integrated Behavior Model and modified by the researcher.

### *2.5 Data Analysis*

The difference test or comparison was conducted using the paired sample t-test with a ratio scale. The comparison of mothers' knowledge and skills between the treatment and control groups was conducted using the independent t-test. The influence of maternal knowledge and skills on behavior in preventing stunting in infants aged 0–6 months was analyzed using the

Spearman Rank test. The simultaneous influence of knowledge and skills on behavior in preventing stunting in infants aged 0–6 months in Bilaporah Village was analyzed using linear regression.

# 3. RESULTS

### *3.1 Distribution of Demographic Data*

Results from Table 1 show that the education level of mothers in the treatment group indicates that most respondents have an elementary school education, totaling 9 people (56.25%). In the control group, it is shown that most respondents have a junior high school education, with 7 people (43.75%). In the data on mothers' occupations, it is shown that in the treatment group, 10 out of 16 respondents are housewives (62.50%). In the control group, 13 out of 16 respondents are housewives (81.25%). Meanwhile, the data on the children's gender shows that in the treatment group, more than half, 11 people (68.75%), are female, whereas in the control group, 7 people (43.75%) are female.

**Table 1.** Frequency distribution based on the age, education, and occupation of mothers

| No. | Characteristic | Treatment group | | Control group | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| 1 | Education Level of mother | | | | |
| | a. Elementary School | 9 | 56.25 | 5 | 31.25 |
| | b. Junior High School | 3 | 18.75 | 7 | 43.75 |
| | c. Senior Hight School | 4 | 25 | 4 | 25 |
| | d. Graduate | 0 | 0 | 0 | 0 |
| | Total | 16 | 100 | 16 | 100 |
| 2 | Work of Mother | | | | |
| | Civil Servant | 0 | 0 | 0 | 0 |
| | Private | 0 | 0 | 1 | 6.25 |
| | Entrepreneur | 6 | 37.50 | 2 | 12.50 |
| | Housewife | 10 | 62.50 | 13 | 81.25 |
| | Total | 16 | 100 | 16 | 100 |
| 3 | Gender | | | | |
| | Man | 5 | 31.25 | 9 | 56.25 |
| | Woman | 11 | 68.75 | 7 | 43.75 |
| | Total | 16 | 100 | 16 | 100 |

### *3.2 Differences in Maternal Knowledge and Skills Between Treatment and Control Groups*

After data analysis was carried out (Table 2), it was found that from 16 respondents in the treatment group, the average knowledge in preventing stunting in infants aged 0-6 months were 16.50 (post-test treatment) and 14.62 (post-test control) . The results of the difference test used the Independent T-test obtained a p-value = 0.022, where the significance is smaller than the degree of error set by the researcher, namely $\alpha = 0.05$ (5%), so that it can be concluded that there is a variation in maternal awareness in preventing stunting in infants aged 0-6 months between the treatment group (Emo-Demo method) and the control group (lecture method).

For the skill variable, the average maternal skills in preventing stunting in infants aged 0-6 months were 31.25 (post-test treatment) and 28.18 (post-test control) . The results of the difference test used the Independent T-test obtained a p-value = 0.021, where the significance is smaller than the degree of error set by the researcher, namely $\alpha = 0.05$ (5%) so that it can be concluded that there is a difference in maternal skills in preventing stunting in infants aged 0-6 months between the treatment group (Emo-Demo method) and the control group (lecture method).

### *3.3 Influence of Maternal Knowledge and Skill on Behavior in Preventing Stunting*

After data analysis was carried out, it was found that there was 32 respondents in the knowledge group (post-test) and 32 respondents in the behavioral group (post-test). The test results used the Spearman Rank test and obtained a p-value = 0.047, where the significance is smaller than the degree of error set by the researcher, namely $\alpha = 0.05$ (5%), so that it can be concluded that

there is a correlation between awareness and actions in preventing growth impairment in infants aged 0-6 months (Table 3). So, between knowledge and maternal behavior in preventing stunting in infants aged 0-6 months, there is a fairly strong influence (r = 0.354), if the mother's knowledge is high, her behavior will be good in preventing stunting in infants aged 0-6 months.

**Table 2.** Differences in maternal knowledge between the treatment and the control groups

| Respondent code | Knowledge | | Skill | |
|---|---|---|---|---|
| | Post test treatment | Post test control | Post test treatment | Post test control |
| 1 | 16 | 16 | 34 | 23 |
| 2 | 11 | 13 | 31 | 30 |
| 3 | 16 | 13 | 30 | 28 |
| 4 | 13 | 18 | 24 | 27 |
| 5 | 18 | 13 | 32 | 31 |
| 6 | 17 | 10 | 29 | 30 |
| 7 | 16 | 16 | 30 | 26 |
| 8 | 18 | 15 | 34 | 27 |
| 9 | 16 | 13 | 29 | 25 |
| 10 | 20 | 13 | 30 | 21 |
| 11 | 19 | 16 | 36 | 28 |
| 12 | 18 | 15 | 36 | 34 |
| 13 | 15 | 16 | 33 | 36 |
| 14 | 18 | 13 | 27 | 26 |
| 15 | 16 | 15 | 32 | 32 |
| 16 | 20 | 17 | 33 | 27 |
| Mean | 16.50 | 14.62 | 31.25 | 28.18 |
| p-value | 0.022 | | 0.021 | |
| $\alpha$ | 0.05 | | 0.05 | |

Source: Primary data 2024

**Table 3.** The influence of maternal knowledge and skill on behavior (n=32)

| | | Behavior | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Less | % | Enough | % | Good | % | Total | % |
| Knowledge | Less | 0 | 0 | 0 | 0 | 3 | 9% | 3 | 9% |
| | Enough | 1 | 3% | 1 | 3% | 4 | 13% | 6 | 18% |
| | Good | 0 | 0 | 0 | 0 | 23 | 72% | 23 | 73% |
| Total | | 1 | 3% | 1 | 3% | 30 | 94% | 32 | 100% |
| *p-value* | 0.047 | | | | | | | | |
| *r* | 0.354 | | | | | | | | |
| | Less | 0 | 0 | 0 | 0 | 2 | 6% | 2 | 6% |
| Skill | Enough | 1 | 3% | 1 | 3% | 2 | 6% | 4 | 12% |
| | Good | 0 | 0 | 0 | 0 | 26 | 81% | 26 | 82% |
| Total | | 1 | 3% | 1 | 3% | 30 | 94% | 32 | 100% |
| *p value* | 0.004 | | | | | | | | |
| *r* | 0.494 | | | | | | | | |

Source: Primary data 2024

After data analysis was carried out, it was found that there were 32 respondents in the skills group (post-test) and 32 respondents in the behavioral group (post-test). The test results used the Spearman Rank test and obtained a p-value = 0.004, where the significance is smaller than the degree of error set by the researcher, namely $\alpha$ = 0.05 (5%), so it can be concluded that abilities and conduct influence the prevention of growth impairment in infants aged 0-6 months. So, between skills and maternal behavior in preventing stunting in infants

aged 0-6 months, there is a fairly strong influence (r = 0.494), if the mother's skill is high, her behavior will be good in preventing stunting in infants aged 0-6 months

### *3.4 Influence of Knowledge and Skills Simultaneously on Behavior*

Based on the results of the data analysis (Table 4), it shows that the results of the knowledge and skills variable test (post-test) with behavior (post-test), the results obtained are p-value = 0.046 (<0.05), which indicates that the knowledge and skills variables simultaneously influence behavior in preventing stunting in children aged 0-6 months.

The effectiveness of the Emo-Demo method increases knowledge and skills in stunting prevention behavior in infants aged 0-6 months (Figure 1).

**Table 4.** The influence of knowledge, skills and behavior simultaneously (n=32)

| ANOVA | | | | | |
|---|---|---|---|---|---|
| **Model** | **Sum of squares** | **df** | **Mean square** | **F** | **Sig.** |
| Regression | 0.905 | 2 | 452 | 3.438 | 0.046 |
| Residual | 3.814 | 29 | 132 | | |
| Total | 4.719 | 31 | | | |

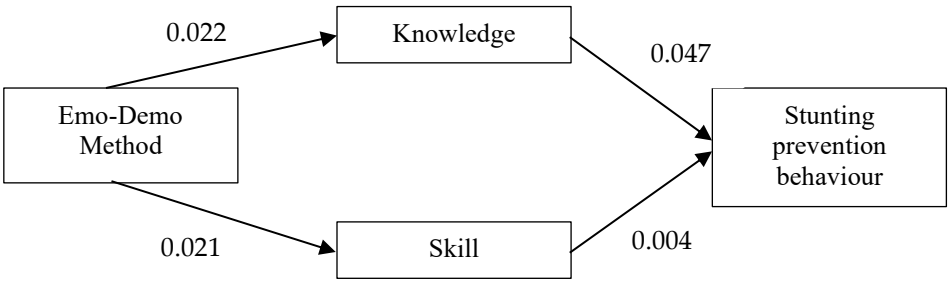


**Figure 1.** The effectiveness of Emo-Demo method to improve knowledge and skills

## 4. DISCUSSION

Based on the results of the research that has been conducted, the results obtained are the average understanding in the experimental group, namely 16.50 and the understanding in the control group, namely 14.63. So, from these results it can be seen that the intervention group tends to be more efficient when compared to the comparison group in reducing various obstacles in each baby aged 0-6 months. In addition, the results of the tests carried out showed that there were differences in the field of maternal knowledge in preventing stunting that occurred between the treatment group (using the Emo Demo method) and the control group (using the lecture method).

Emo-Demo is an educational method that combines direct demonstration with emotional elements. This method has proven effective in increasing maternal knowledge because Emo-Demo presents information visually and directly so that mothers can see and practice directly (e.g., breast milk alone is enough, namely by asking the mother to come forward to choose the size of the stomach that suits the baby's age, the importance of immunization, the importance of washing hands and the consequences of not washing hands, how to make MPASI food (Makanan Pendamping ASI, or complementary food) for babies directly prepared by the mother). This makes the information conveyed easier to understand and remember by mothers, because it is conveyed directly in front of the mother briefly and there are key messages that can be easily remembered. In addition to visuals, Emo-Demo also involves the sense of touch, such as asking the mother to practice in front, allowing her to feel the texture of the food that has been made, smell the aroma of healthy and appropriate food for babies according to their age, and even taste the food that has been made. This makes the learning experience richer and more memorable. The use of innovative props, interesting stories, and active interactions makes mothers less bored and more motivated to attend educational sessions, encouraging active participation from mothers. Mothers are not only passive listeners, but are also directly involved in demonstration activities.

This makes mothers feel more ownership and responsibility for the knowledge they gain.

Supported by another research, it is known that from the statistical tests carried out with the Man-Whitney test, the result obtained was p = 0.000 (p <0.05).[15] This indicates a difference in knowledge between the treatment group and the control group. If seen from the mean, the difference in knowledge in the treatment group (41.22) was higher than in the control group (19.78). The findings of this study align with previous research by Mutiarani et al. (2022).[16] The results showed that after receiving education through the Emo-Demo method, there was an average increase (mean) in knowledge of mothers of toddlers in the treatment group. These results were followed by a Wilcoxon test, which showed the p-value = 0.004. The results are less than $\alpha$=5%, which means that there are significant differences in the levels of knowledge produced by mothers of toddlers before and after applying the Emo-Demo method. While the control group showed results with a p-value = 0.157, where the results are more than $\alpha$=5%. it can be interpreted that before and after education using the lecture method, there was no notable change in knowledge in mothers of toddlers.

Shofa et al. also indicates a difference in mothers' knowledge before and after receiving Emo-Demo education.[13] This suggests that there is a noticeable change in mothers' knowledge as a result of the Emo-Demo educational intervention. Mothers with good knowledge increased by 27%, so that mothers who have good knowledge reached 53%. Mothers with less knowledge decreased by 21%, so that after Emo-Demo education there were no mothers who had less knowledge. Based on the research conducted, the average skill level in each treatment group was 31.25, while the control group scored 28.18. This indicates that the treatment group played a role in preventing stunting among infants aged 0–6 months. Additionally, the test results showed a significant difference in the level of knowledge among mothers in each treatment group (using the Emo-Demo method) and the control group (lecture method) regarding stunting prevention for infants in this age range.

The Emo-Demo method is very effective in improving maternal skills because with this method, mothers not only listen to explanations, but also directly practice what is taught, starting from “breast milk alone is enough”, by asking the mother to come forward to match the size of the baby's stomach according to the baby's age correctly, asking the mother to practice the consequences of not immunizing the baby directly, asking the mother to practice the consequences of not washing hands with soap, and also teaching mothers directly how to make nutritious MPASI food according to the age, needs and textures that are appropriate for the baby's age. Additionally, the strong emotional element in the Emo-Demo method makes the learning experience more memorable so that mothers will find it easier to remember information and skills. When mothers succeed in practicing the skills taught (the baby's breast milk needs according to the baby's stomach, the importance of immunization, the importance of washing hands, and making MPASI directly) the mother's confidence will increase so that she will feel more competent in caring for babies to prevent stunting. This Emo Demo method also provides practical solutions to mothers that can be directly applied by mothers at home (getting MPASI recipes that are easy to make and the ingredients are easy to get). Moreover, with this method, there is a warm interaction between the counselor and the mother so that the mother can ask and discuss directly with the counselor, making them feel supported and not worried about the skills obtained.

Andriana et al (2022) reported that, based on the research results, it is known that from the statistical tests carried out with the Wilcoxon test, the result obtained was p = 0.000 (p < 0.05), meaning there is a difference in the skills of cadres (health cadres in Indonesian healthcare system) before and after being given Emo-Demo method training.[17] The ability of cadres to deliver counseling on breastfeeding alone was quite creative and interactive. Based on the study results of Nadira et al's,[18] the Emo-Demo method is effective in improving the skills of Posyandu cadres and mothers of toddlers on nutritional issues, namely from an average score before the intervention of 41.06 to 51.85 after the intervention. This means that there is an increase in skills of 26.27% (p-value = 0.0005). This activity also improves the skills of Posyandu cadres and mothers of toddlers in preventing nutritional problems using the Emo-Demo method.

Based on the findings of the research, it was discovered that maternal knowledge influences behavioral changes in avoiding growth impairment in newborns aged 0-6 months. The test results demonstrated a correlation between maternal knowledge and behavior in avoiding growth impairment in newborns aged 0-6 months. The

relationship between knowledge and maternal behavior in avoiding growth impairment in newborns aged 0-6 months has a fairly strong influence, if maternal knowledge is high then her behavior will be good in avoiding growth impairment in newborns aged 0-6 months. Knowledge is often considered the initial foundation for behavioral change. The more a person understands about something, the more likely they are to act on that understanding because when someone has in-depth knowledge about a topic, they can connect different pieces of information and see the bigger picture. This allows them to make more informed choices and take more suitable actions, aligning with research findings by researchers that good knowledge will change behavior for the better.

Based on the findings from the study of Kusumaningrum et al., in the evaluation that has been conducted, a significant relationship was found in terms of knowledge in pregnant women related to stunting along with stunting prevention behavior ($p = 0.001$).[19] So, the resulting prevalence ratio shows PR > 1, which has an interval range that does not include the number 1. This means that lack of knowledge related to stunting is a risk factor for stunting prevention behavior that tends to be less effective. The prevalence ratio value of 6.7 also shows that pregnant women with low knowledge tends to have a six times higher risk of engaging in negative behavior in preventing stunting. This discovery aligns with studies carried out by Meinitasari et al.[20] This finding shows a significant relationship between the level of knowledge and behavior in the use of antibiotics, which gives a significance value of 0.000 (<0.05) and a correlation that tends to be positive of 0.528.[20] In addition, the results obtained also support the theory put forward by Notoatmodjo (2014),[21] who stated that there are several factors that can influence human behavior, including knowledge, beliefs, attitudes, reference figures, to sources of information obtained. So, the better understanding a person has regarding antibiotics, the better their attitudes and behavior will be.

Based on the findings of the research, it was discovered that maternal skills have an effect on behavioral changes in preventing stunting in infants aged 0-6 months. The test results showed that there was an influence between maternal knowledge and maternal behavior in preventing stunting in infants aged 0-6 months. The meaning of the relationship between knowledge and maternal behavior in preventing stunting in infants aged 0-6 months has a fairly strong influence, if maternal knowledge is high then her behavior will be good in preventing stunting in infants aged 0-6 months. When someone has good skills, they tend to be more prepared to face challenges and find constructive solutions, thus reducing the possibility of bad behavior. Stunting prevention behavior runs smoothly according to the skills they have. Good skills and good emotional management help someone to recognize, understand, and manage their emotions healthily. This reduces the risk of aggressive or impulsive behavior that is often triggered by uncontrolled emotions and also when someone feels able to do something, their self-confidence will increase. This high self-confidence encourages better behavior so that it is in accordance with the results of the researcher's research that good skills can influence good behavior in preventing stunting.

According to Asri et al., training is a process of teaching and learning that imparts specific knowledge, skills, and attitudes to enhance proficiency and improve the ability to fulfill responsibilities in line with established standards.[22] Essentially, training aims to shape behavior, as it ultimately results in changes in how individuals act. According to the theory of behavioral modification, a person's mindset often influences whether they apply their knowledge in practice.[23] Therefore, if someone lacks knowledge, then that person lacks good skills or behavior. The relationship between personal abilities and behavior to prevent perineal wound infections in postpartum mothers obtained a p-value = 0.003 ($p < 0.05$), so it can be concluded that the null hypothesis (Ho) is rejected, indicating that there is a connection between individual skills and behavior in preventing perineal wound infections in postpartum mothers.[24] An OR = 17.250 was obtained, which means that respondents who have skilled individual skills have a 17.2 times greater chance of behaving well in preventing perineal wound infections compared to mothers who are not skilled

A study found that respondents with good breast care skills tended to provide exclusive breastfeeding and respondents with poor breast care skills tended[25] The outcome obtained from the numerical evaluation yields a correlation value of $p = 0.012$, which signifies a fairly significant relationship in the ability of each behavior to provide exclusive breastfeeding in the Pekapuran Raya Banjarmasin Health Center work area so that the hypothesis is accepted. The prevalence ratio of this variable is 2.023, meaning that mothers who have good

breast care skills tend to provide exclusive breastfeeding 2.023 times more than mothers who have poor skills.

Based on the findings of the data analysis, it indicates that the outcomes of the knowledge and skills variable test (post-test) to behavior (post-test) showed that there was an effect between maternal knowledge and skills simultaneously influencing behavior in preventing stunting in children aged 0-6 months. Behavior change is a complex process, but knowledge and skills act as a strong foundation in achieving the change. Knowledge acts as a guide and skills as a tool to be used, with sufficient knowledge, a person can understand the short and long-term consequences of a behavior. Knowledge opens the door for someone to find healthier or more productive behavioral alternatives, and also Relevant knowledge can increase a person's motivation to change. When someone understands the benefits of behavioral change, they will be more motivated to achieve those goals, while skills such as stress management and emotional control help someone overcome challenges that arise during the behavior change process, make good decisions in accordance with their behavioral change goals, overcoming obstacles that may arise during the change process.

Knowledge is often considered the initial foundation for behavioral change. The more a person understands about something, the more likely they are to act according to that understanding because when someone has in-depth knowledge of a topic, they can connect various pieces of information and see the bigger picture. This helps them make informed decisions and take more effective actions so that in accordance with the results of the researcher's research that good knowledge will change behavior for the better and is also followed by changes in a person's skills so that a person is more motivated to change behavior. Another study showed that the highest percentage, namely, 83.3% of respondents had moderate knowledge of dental health with a very low caries status category.[26] The analysis conducted using the chi-square method resulted in a significance value of 0.028 or a p-value < 0.05. This value indicates that there is a correlation between knowledge of dental health maintenance and clean and healthy living behavior, indicating that the highest percentage, namely 76.9% of respondents have poor tooth brushing skills with very low dental maintenance behavior status. An analysis conducted using the chi-square method obtained a significance value of 0.013 or a p-value < 0.05, which indicates a correlation between human skills in brushing teeth and behavior in dental care.

The limitations in this study include respondents not being restricted by the aspect of parity, meaning the caregivers' experience in taking care of babies varies, because some have no experience in baby care while others already have 2 or more children. Respondents should also be made homogeneous based on their occupations, because some work as entrepreneurs, employees, and housewives. The Emo-Demo activities coincided with the Posyandu services, which were attended by many people in a crowded and less conducive situation.

# 5. CONCLUSION

There is a difference between knowledge and skills mothers in preventing stunting in infants aged 0-6 months between the treatment group and the control group. There is an influence between knowledge and skills simultaneously on behavior in preventing stunting in infants aged 0-6 months in the work area of the Jeddih Socah Health Center Bangkalan. The suggestions from this research for health workers are that the findings can be used by health workers as a strategy to increase knowledge and skills in stunting prevention behavior in infants aged 0-6 months by providing health education using the Emo-Demo method.

## Ethical Approval

This research has received ethical feasibility approval from the Health Research Ethics Committee of the Ngudia Husada Madura Health Sciences College, with the number 2259/KEPK/STIKES-NHM/EC/IX/2024.

## Acknowledgement

We sincerely acknowledge the facilities and support from the Research and Community Service Institute of the Noor Huda Mustofa University.

## Competing Interests

All the authors declare that there are no conflicts of interest.

## Funding Information

This study funded by Research and Community Service Institute of Noor Huda Mutofa University.

## Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

# REFERENCES


1. Indrio F, Pietrobelli A, Dargenio VN, Marchese F, Grillo A, Vural M, et al. The key 1000 life-changing days. Global Pediatrics. 2023;4:100049. http://dx.doi.org/10.1016/j.gpeds.2023.100049
2. Alqurishi AK, Tawfiq HL, Hussein HK, Al-Attar Z. Prevalence and Reasons of Incomplete Vaccination among Children below Two Years old. Azerbaijan Medical Journal. 2022;62(4):1351-1365.
3. Ejemot-Nwadiaro RI, Ehiri JE, Arikpo D, Meremikwu MM, Critchley JA. Hand washing promotion for preventing diarrhoea. Cochrane Database of Systematic Reviews. 2015;2015(9):CD004265. http://dx.doi.org/10.1002/14651858.cd004265.pub3
4. Asqy Dendy ER, Putri RGP, Yuniasih D, Kurniawan NU. The Association Between Exclusive Breastfeeding and the Occurrence of Stunting Among Children Aged 12-60 Months in Community Health Centers in Yogyakarta City. Diponegoro Medical Journal. 2024;13(1):37–43. http://dx.doi.org/10.14710/dmj.v13i1.40723
5. Pramulya I, Wijayanti F, Saparwati M. Hubungan pemberian asi eksklusif dengan kejadian stunting pada balita usia 24-60 bulan. Jurnal Kesehatan Kusuma Husada. 2020;35–41. http://dx.doi.org/10.34035/jk.v12i1.545
6. Laksono AD, Wulandari RD, Amaliah N, Wisnuwardani RW. Stunting among children under two years in Indonesia: Does maternal education matter? Sato MO, editor. PLOS ONE. 2022;17(7):e0271509. http://dx.doi.org/10.1371/journal.pone.0271509
7. Indonesian Ministry of Health. Survei Status Gizi Indonesia (SSGI) 2022. Indonesian Ministry of Health; 2023. Available from: https://layanandata.kemkes.go.id/katalog-data/ssgi/ketersediaan-data/ssgi-2022 (Accessed on 12 Jan 2025)
8. Indonesian Ministry of Health. SKI 2023 Dalam Angka. Indonesian Ministry of Health; 2023. Available from: https://www.badankebijakan.kemkes.go.id/ski-2023-dalam-angka/ (Accessed on 12 Jan 2025)
9. Hermawan SI, Yani DI, Yulianita H, Rahayuwati L. Correlation Mothers' Knowledge about Stunting and Exclusive Breastfeeding Behavior. Journal of Nursing Care. 2023;6(2). http://dx.doi.org/10.24198/jnc.v6i2.44398
10. Mshida HA, Kassim N, Mpolya E, Kimanya M. Water, Sanitation, and Hygiene Practices Associated with Nutritional Status of Under-Five Children in Semi-Pastoral Communities Tanzania. The American Journal of Tropical Medicine and Hygiene. 2018;98(5):1242–9. http://dx.doi.org/10.4269/ajtmh.17-0399
11. Phukan D, Ranjan M, Dwivedi LK. Impact of timing of breastfeeding initiation on neonatal mortality in India. International Breastfeeding Journal. 2018;13(1). http://dx.doi.org/10.1186/s13006-018-0162-0
12. Rengganis A, Katmini K. Application of Theory of Planned Behavior on the Implementation of the Emo Demo Creation of Healthy PMT with Full Nutrition in Posyandu Gedang – Gedang Village Batuputih Sumenep. Journal for Quality in Public Health. 2021;5(1):19–26. http://dx.doi.org/10.30994/jqph.v5i1.243
13. Shofa M, Mujito M, Lundy F. The effect of education using the emo-demo method on parents' knowledge and skills in preventing stunting. Jurnal Cakrawala Promkes. 2024;6(2):104-112. https://doi.org/10.12928/jcp.v6i2.11231
14. Al Rahmad AH, Junaidi, Muliyani NS,Emilda. The impact of integrating the ISO/IEC 25010 standard into the "PSG Balita" on the quality of the toddler nutritional status report data. AcTion: Aceh Nutrition Journal. 2023;8(4):653-659. http://dx.doi.org/10.30867/action.v8i4.754
15. Thakur S, Mathur P. Nutrition knowledge and its relation with dietary behaviour in children and adolescents: a systematic review. International Journal of Adolescent Medicine and Health. 2021;34(6):381–392. http://dx.doi.org/10.1515/ijamh-2020-0192
16. Mutiarani AL, Putri PH, Yuliani K. Perbedaan Edukasi Pemberian Makan Balita dengan Metode Emotional Demonstration dan Metode Ceramah terhadap Pengetahuan dan Sikap Ibu Balita di RT 06 RW 08 Kelurahan Keputih Kota Surabaya. Preventia : The Indonesian Journal of Public Health. 2022;7(2):18. http://dx.doi.org/10.17977/um044v7i22022p18-24
17. Andriana A, Junita E, Kristina E, Herawaty R, Fahmi YB. The effect of emo-demo training on knowledge and skills of posyandu cadres on "ASI only enough." Jambura Journal of Health Sciences and Research. 2022;4:8–14. http://dx.doi.org/10.35971/jjhsr.v4i0.12527
18. Nadira NA, Widdefrita W, Amos J, Silaban EML, Yuzar Y, Adriyanti SL. Edukasi Emo-Demo pada Kader Posyandu dan Ibu Balita dalam Pencegahan Masalah Gizi. Abdi: Jurnal Pengabdian dan Pemberdayaan Masyarakat. 2023;5(2):158–164. https://doi.org/10.24036/abdi.v5i2.405
19. Kusumaningrum S, Anggraini MT, Faizin C. Hubungan Pengetahuan dan Dukungan Keluarga dengan Perilaku Pencegahan <em>Stunting</em> pada Ibu Hamil. Herb-Medicine Journal. 2022;5(2):10. http://dx.doi.org/10.30595/hmj.v5i2.12787
20. Meinitasari E, Yuliastuti F, Santoso SB. Hubungan tingkat pengetahuan terhadap perilaku penggunaan antibiotik masyarakat. Borobudur Pharmacy Review. 2021;1(1):7–14. http://dx.doi.org/10.31603/bphr.v1i1.4869
21. Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2014.
22. Asri, Sigit Mulyono, Uswatul Khasanah. Pengaruh Pelatihan Kader Posbindu Terhadap Perilaku Deteksi Dini Hipertensi Pada Usia Dewasa. Jurnal Kesehatan Panrita Husada. 2020;5(1):43–52. http://dx.doi.org/10.37362/jkph.v5i1.315
23. Fishbein, Martin, Ajzen I. Predicting and changing behavior: The reasoned action approach. New York, NY: Psychology Press; 2010.

24. Yulianisa E, Mardiyah MS. Sikap, Keterampilan Individu, dan Dukungan Suami terhadap Perilaku Pencegahan Infeksi Luka Perineum Ibu Postpartum. Jurnal Ilmiah Kebidanan Indonesia. 2019;9(04):154–62. http://dx.doi.org/10.33221/jiki.v9i04.409
25. Nisa F, Damayanti N, Suhariadi F, Anggasari Y, Dewi FE, Arini D, et al. Breastfeeding based on Breastfeeding Self-efficacy and Social Support in Wonokromo Surabaya. Open Access Macedonian Journal of Medical Sciences. 2021;9(E):1026–31. http://dx.doi.org/10.3889/oamjms.2021.6381
26. Yuniarly E, Ayun Q, Kumalasari DE, Purwati DE. Knowledge about Dental Caries and The DMF-T Index in Adolescents. Dental Therapist Journal. 2024;6(2):43–49. http://dx.doi.org/10.31965/dtj.v6i2.1650