

Brief

Community Empowerment in Stunting Prevention: Implementation of the UBaMa Method (Ultra Violet Rays and Baby Massage)

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ABSTRACT

Babies are an age group that is vulnerable to stunting. The incidence of stunting in Ngariboyo District in 2022 was 185 (13.14%) children under five, the highest occurred in Mojopurno Village, which was 49 (19.91%) children under five. The purpose of this activity is to improve the understanding, attitude and behavior of baby mothers in stimulation with the UBaMa method. The method carried out is to conduct a pre-test for baby mothers, followed by providing explanations and training on the UBaMa method. After that, the baby's mother was asked to carry out UBaMa at home, evaluated at the second meeting and so on until the fourth meeting. After the fourth meeting, a post-test was carried out. The results achieved were an improvement in the skills of mothers under five to do stimulation with the UBaMa Method with a proficiency of 68%. Knowledge Improvement with pre-test 49 and post-test 83.75. The UBaMa Stimulation Method (Ultra Violet and Baby Massage) can improve the growth and development of babies. It is recommended that the baby's mother periodically stimulate UBaMa at least 3 times a week to increase breast milk production so that it can be used to prevent stunting.

Keywords: Baby mother class; stunting; child growth; baby massage

1. INTRODUCTION

Indonesia is a developing country where the problem of undernourished children under five is still quite high, chronic malnutrition can cause stunting.⁽¹⁾ For this reason, one form of community service is the efforts of educational institutions by carrying out useful community activities, one of which is the UBaMa Method, namely baby massage and UV light exposure as an effort to increase growth and development and help in the prevention of stunting in toddlers aged 1-12 months.^(2,3) Children under five are an age group that is prone to malnutrition such as stunting. According to Losong and Adriani (2017), stunting is a physical growth disorder that is characterized by a decrease in growth rate and is the impact of nutritional imbalance over a long period of time.⁽⁴⁾ According to WHO, stunting is based on the body display index compared to age or height in the age group with a limit (Z-score) of less than 2 SD.⁽⁵⁾ In Indonesia, stunting is still one of the unresolved nutritional problems. The case of stunting in Indonesia is ranked 4th in the world and 2nd in Southeast Asia.

The selection of Mojopurno Village, Magetan Regency was based on several considerations. the number of heads of families in Mojopurno Village is 1323. In 2022, in Ngariboyo sub-district there are 2543 children under five, of whom 158 (10.18%) are stunted. The highest number of stunting occurred in Mojopurno village, the number of children under five was 246 people with an incidence of stunting 49 (19.91%), of 49 who experienced malnutrition 3 (6.1%) and malnutrition 21 (42.86%). The incidence of stunting in 2022 is quite high, exceeding the maximum standard value set by WHO, which is 20%. toddler. The government targets a decrease in stunting incidence in 2024 by 14%. In Mojopurno Village, the class of mothers under five for early detection and stimulation in increasing growth and development and stunting prevention has not been implemented. Various studies show that the factors that cause stunting in toddlers according to Ni'mah and Nadhiroh (2015) show that low body length, toddlers who do not get exclusive breastfeeding, low family income and lack of nutritional knowledge are factors related to stunting events.⁽⁶⁾

It is important to reduce nutritional problems, especially stunting, as early as possible to avoid disturbances in child development and negative impacts that will take place in later life such as intellectual decline, retribution to disease, decreased productivity, to cause poverty and the risk of giving birth to low birth weight babies. In the short term, stunting causes growth failure, cognitive and motor development inhibitions, and suboptimal body size and metabolic disorders.⁽⁷⁾

One of the efforts to reduce stunting is by providing baby massage treatment is the best and cheapest alternative treatment in an effort to increase the baby's weight optimally so as to increase the baby's weight and increase the child's growth and development in the future. Baby massage is effective in increasing weight, so it is necessary to use the massage carried out by the baby's mother. According to the Director of Traditional Health Services of the Ministry of Health (Kemkes) of the Republic of Indonesia, Dr. dr. Ina Rosalina Dadan, Sp.A(K), M.Kes, M.H.Kes emphasized that baby massage (baby Masagge) can help overcome nutritional problems. In the launch of the National Baby Massage Movement by Johnson's on Wednesday, July 4, 2018, she explained that one of the causes of stunting (short stature children) is nutrition that is not fulfilled during pregnancy. This shortcoming

can be pursued before the child is 2 years old so that he becomes tall and big, one of which is with a baby massage. The baby massage program that is being intensified by the Ministry of Health to the 34 provinces also suggests that baby massage be carried out by parents or those closest to them, especially mothers, this baby massage is also useful to strengthen bonding, through the touch of the mother. Baby massage is recommended to be done two to three times a week with a duration of about 15 minutes.^(2,3)

The UBaMa method (ultra violet rays and baby massage) as a means to help increase growth and can help prevent stunting in toddlers aged 1-12 months in Mojopurno Village, Ngariboyo District. Based on the data on conditions in Mojopurno Village, Ngariboyo District, Magetan Regency as mentioned above, activities were carried out to assist Mojopurno Village in solving maternal and child health problems, especially high stunting and nutritional disorders. The research on the combined effect of ultraviolet (UV) exposure and baby massage is important for several reasons: prevention of stunting, enhancing vitamin D levels, promotion physical development, improving maternal and infant bonding, community health education, cultural relevance and holistic approach. Overall, this research contributes to a better understanding of multifaceted approaches to improving child health, particularly in vulnerable populations.

2. METHODS

The method of this community service activity is to provide child health services in the form of baby mother class activities. The activity was carried out in 2 parts. Each section is carried out in the form of a study group. Each group consists of a maximum of 10 mothers and their babies. Each group participated in 4 meetings. In general, the purpose of this activity is to increase knowledge, change mothers' attitudes and behaviors so that they understand about stimulation of children's growth and development with the UBaMa method.

This community service activity has received a permit from the National and Political Unity Agency with the number: 072/160/403.205/2024. Before the baby mother class activities began, an approach was made with the coordinator midwife and the head of Mojopurno village. At the first meeting, it was explained about growth and development monitoring as well as

stimulation that must be given to the baby. Furthermore, it explains about stimulation with the UBaMa method in babies, including the benefits, goals, preparations, and steps in implementing the UBaMa method.

The media used in this activity includes classic learning media in the form of: UBaMa guide module, LCD, laptop. Practical learning media in the form of: KIA books, notebooks, baby scales, infantometers, metline, baby lotion, swaddling cloth and mattresses. Mentoring/follow-up learning media is in the form of monitoring and evaluation to measure the success of the training.

Each group was trained and guided to perform the UBaMa method, evaluated every 1-2 weeks. The activity continued for up to 2 months. The duration of activities in one meeting is between 90-120 minutes. Meeting frequency 4 times. The place of activity is at the Mojopurno village hall, Ngariboyo District, Magetan Regency. The implementation time of group 1 activities is on June 5, 2024, June 20, 2024, July 2, 2024, and July 17, 2024. Group 2 will be held on June 4, 2024, June 19, 2024, July 4, 2024, July 19, 2024. Monitoring and evaluation are carried out at the 2nd to 4th meetings. Monitoring and evaluation activities are carried out on the steps to implement UBaMa that have been carried out by the baby's mother while at home. Height and weight measurements are also taken. Once the data is collected, it is included in the excell application and analyzed descriptively.

3. RESULTS AND DISCUSSION

The results of community service activities in the community partnership program are in the form of community empowerment in the health sector in stunting prevention, the implementation of the UBaMa method.

The UBaMa method is carried out independently at home by the baby's mother at least 3 times in 1 week for 2 months, evaluated every 2 weeks in the form of the implementation of the UBaMa method. Weight and height growth assessments were carried out 2 times in the first and second months at the Mojopuno village hall, Ngariboyo District.

Before the implementation of the UBaMa (Ultraviolet and Baby Massage) method, material on the use of KIA books and stimulation methods with the UBaMa method was given. To measure the level of

knowledge of mothers, pre-tests and post-tests are carried out. There is an increase in your knowledge / understanding of the implementation of the UBaMa method.

Mother's Knowledge

Table 1 shows that the knowledge of baby mothers about the stimulation of the UBaMa method (UV light exposure and baby massage) averaged 60 pre-test results and post-test results 83.75. Table 1 shows that the knowledge of the baby's mother at the time of the pre-test is a minimum score of 30 and a maximum score of 60, with an average score of 49. At the time of the post-test the minimum score is 70 and the maximum score is 100, with an average score of 83.75. So, it can be concluded that there is an increase in the knowledge of baby mothers about stimulation with the UBaMa method (UV exposure and baby massage).

Table 1. Provision of KIA book materials and methods of stimulating infant growth and development with the UBaMa method to infant mothers in Mojopurno Village, Ngariboyo District, Magetan Regency in 2024

	Minimum values	Maximum value	Mean	SD
Pre-test	30	60	49	7.363
Pos-test	70	100	83.75	10.622

Mother's Abilities

Table 2 shows that the ability to carry out stimulation with the UBaMa method (UV light exposure and Baby Massage) in the first evaluation as much as 80% needs to be improved, in the second evaluation is as much as 25% proficient, 25% are capable, 50% need improvement, in the third evaluation is 60% able and 40% proficient.

Baby's Weight and Height

Table 3 shows the results of weight gain assessment in the first month with a Mean value of 0.7850 and in the second month with a Mean value of 0.7350. The results of the assessment of height increase in the first month with a Mean value of 3.3600 and in the second month with a Mean value of 1.5636.

The results of this community service activity show that there is an increase in mothers' knowledge and abilities in baby care, especially in stimulation with the UBaMa method. This is supported by the characteristics of mothers, namely in the healthy

Table 2. Evaluation of the first, second and third UBaMa method in Mojopurno village in 2024

No.	Value	First		Second		Third	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Needs improvement	16	80	10	50	0	0
2	Capable	4	20	5	25	12	60
3	Proficient	0	0	5	25	8	40
	Total	20	100	20	100	20	100

reproductive age group, secondary education and almost all housewives. Knowledge is the result of knowing and occurs after people have ideed of certain objects. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste, and touch. Most of human knowledge is acquired through the eyes and ears. Knowledge is a very important domain in shaping a person's actions (overt behavior) Knowledge is the initial factor of behavior. Behavior based on knowledge will be more lasting than behavior that is not based on knowledge.

The results of community service activities showed a significant increase in mothers' knowledge and ability to take care of babies, especially in stimulation with the UBaMa method. A study conducted by Jeong J et al. (2021) stated that after participating in training, mothers were able to improve their skills in providing stimulation to their babies. In addition, the mother's knowledge of the importance of stimulation and specific techniques to stimulate the baby's growth and development has also increased significantly.⁽⁸⁾

These results are in line with the findings of Frosch CA et al. (2019), which found that training programs such as UBaMa can effectively improve the ability of parents or caregivers to provide optimal care to premature or high-risk infants. These improvements have a positive impact on children's health and development, including their physical, mental-emotional, and social development. Thus, the indexed literature supports the finding that community service

activities with a focus on the application of the UBaMa method have succeeded in improving the knowledge and skills of mothers in caring for their babies.⁽⁹⁾

The results of this community service activity also showed that by stimulating using the UBaMa method, the baby's weight and height also increased. Stimulation using the UBaMa method (exposure to UV rays and Baby Massage) as an alternative to preventing stunting in babies has become an interesting research topic. Prevention of stunting in the early stages of life is very important, because stunting can have a long-term impact on children's physical and mental health.⁽¹⁰⁾

Several scientific studies have been conducted to evaluate the effectiveness of UBaMa stimulation in increasing infant weight and height. Ultraviolet (UV) light has long been known to have an important role in the synthesis of vitamin D in the human body. However, research also shows that exposure to UV light can have a positive effect on the growth of babies. One mechanism that may be involved is through the activation of calcium metabolism and hormonal regulation that plays a role in bone growth. One of the relevant studies is the study by Corsello A et al., in 2023, which presents evidence that exposure to UV light can increase vitamin D levels in the body so that it contributes positively to bone growth in children.⁽¹¹⁾

Baby massage has also been known to have many benefits for the physical and emotional development of babies. Several studies have shown that baby massage can significantly increase weight gain and length/height of children. For example, Field T et al., in 2010,

Table 3. Evaluation of baby's weight and height in Mojopurno village in 2024

	Baby's Weight				Baby's Height			
	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation
First Evaluation	0.20	2.0	0.7850	0.45222	0.5	11.5	3.3600	3.39001
Second Evaluation	0.40	1.7	0.7350	0.27773	1	11	1.5636	

conducted a meta-analysis of several studies on the effects of baby massage on the physical development of premature/premature children. The results of the analysis showed that there was a significant weight gain and the length of the child's body after undergoing regular massage sessions.⁽¹²⁾

In the context of stunting prevention, the combination of UV exposure with baby massage is a holistic approach to stimulate physical growth.

4. CONCLUSION

Community service activities about UBaMa Method Stimulation (Ultra Violet and Baby Massage) in baby mothers can increase the knowledge and ability of baby mothers so as to maximize the growth and development of babies. It is recommended that baby mothers can carry out stimulation with the UBaMa method regularly at least 3 times in 1 week so that it can increase breast milk production and support the growth of babies, and ultimately can be used to prevent stunting.

Recommendations from this community service activity include:

1. **Community Workshops:** Organize workshops to educate parents and caregivers about the benefits of UV exposure and baby massage. Use these sessions to demonstrate proper massage techniques and safe sun exposure practices.
2. **Guidelines for Safe UV Exposure:** Develop clear guidelines for safe UV exposure for infants, ensuring that caregivers understand the appropriate duration, timing, and conditions for sun exposure to maximize Vitamin D synthesis while minimizing risks.
3. **Integration with Health Services:** Collaborate with local health clinics and pediatricians to incorporate UBaMa practices into routine pediatric care. This could include routine screenings for Vitamin D levels and guidance on baby massage.
4. **Training Local Practitioners:** Train local health workers or community leaders in both UV exposure and baby massage techniques so they can serve as knowledgeable resources in their communities.
5. **Culturally Sensitive Materials:** Create educational materials in multiple languages and incorporate cultural practices to ensure they resonate with diverse community groups.

6. **Monitor Outcomes:** Establish a system to monitor the physical and emotional health outcomes of infants engaged in the UBaMa program over time. This data can be used to provide evidence of effectiveness to stakeholders.

Future Research Directions:

1. **Longitudinal Studies:** Conduct long-term studies to assess the ongoing benefits of combined UV exposure and baby massage on physical and cognitive development, as well as overall health outcomes.
2. **Comparative Studies:** Research the effects of UBaMa practices in varying socio-economic and cultural settings to understand how different contexts influence the effectiveness of these interventions.
3. **Impact on Mental Health:** Investigate the psychological impact of baby massage on caregivers and infants, particularly regarding stress reduction and improved emotional well-being.
4. **Vitamin D Deficiency Research:** Explore the prevalence of Vitamin D deficiency in infants within specific communities and relate it to UBaMa practices to underscore the importance of UV exposure.
5. **Technology Integration:** Examine the potential for digital tools (like apps or online resources) to promote safe UV practices and baby massage techniques, especially in remote or underserved areas.
6. **Multi-Disciplinary Approaches:** Collaborate with nutritionists, pediatricians, and mental health professionals to develop integrated approaches that address all aspects of infant health, including diet, physical touch, and emotional well-being.

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Conflict of Interest

The authors declare no conflict of interest.

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