



The Effectiveness of Education Through Audiovisuals in Increasing Mothers' Knowledge of Baby Massage to Prevent Stunting in Toddlers

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ABSTRACT

Background: The prevalence of stunting in Jakarta reached 14.80%, and stunting in North Jakarta was 18.50%, ranking second after the capital city of Jakarta. One effective way to prevent stunting is by providing stimulus and baby massage by mothers and families independently to their children. Audiovisuals can be applied as an effective learning media, in increasing knowledge and can motivate changing maternal and family health behavior.

Purpose: To determine the effectiveness of education through audiovisuals in increasing mothers' knowledge about baby massage to prevent stunting in toddlers at the Koja District Health Center, North Jakarta.

Methods: research design, one group pre-test-post test design, 62 respondents. Data collection was carried out in 3 meetings consisting of pretest, treatment, and posttest, using the Wilcoxon sign rank test.

Results: Research shows Asymp. sig (2-tailed) p-value 0.0000 ($P = < 0.005$) z value - 6.244. The research results show that education through audiovisuals is very effective in increasing mothers' knowledge about baby massage to prevent stunting in toddlers.

Conclusion: Where education through audiovisual is easier to understand and mothers can teach babies to massage independently to stimulate toddlers' growth and development to prevent stunting.

Keywords: *education; maternal knowledge; baby massage,;stunting; toddlers*

BACKGROUND

Stunting is a chronic nutritional problem that arises as a result of malnutrition that has accumulated over a long period. Stunting is where the height index for age (TB/U) is less than minus two standard deviations (<-2 SD) or the height of a child under five is shorter than what should be achieved at a certain age. The global prevalence of stunting in the world is more than 150 million (21.9%), while on the Asian continent, it is 55%, which is second only to South Asia and Southeast Asia at 14.9%. Based on the World Health Organization (WHO), the limit for stunting is height growth for age with a Z-score value of less than minus two standard deviations (-2 SD). Indonesia is one of the five countries with the highest stunting cases globally, requiring hard synergistic efforts from various parties through partnerships and collaboration to achieve targets (World Health Organization, 2018).

Based on the Indonesian Nutrition Status Survey (SSGI) at the BKKBN National Working Meeting, stunting cases in Indonesia fell from 24.4% in 2021 to 21.6% in 2022. The impact of stunting is not It's just a matter of height, but the most dangerous thing is the child's low ability to learn, mental retardation, and the emergence of chronic diseases (World Health Organization (WHO), 2018). The target to be achieved is 14% in 2024; the hope is that there will be a decrease of 3.8% over the next two consecutive years; from WHO standards regarding the prevalence of stunting, it must be less than 20%. The Ministry of Health has carried out more specific interventions in 2 main ways, namely nutritional interventions for mothers before and during pregnancy, and interventions for children aged 6 to 2 years. Stunting in DKI Jakarta is 14.8% with the number of toddlers in Jakarta experiencing stunting or being stunted by as many as 116 thousand toddlers (UNICEF/WHO/WORLD BANK, 2021).

Stunting is a serious health problem and can be treated early because it will have a long-term impact on a person's life (Torlesse et al., 2016). Stunting can be caused by several factors, including poor nutrition experienced by pregnant women, lack of exclusive breastfeeding history, low family income and low maternal education, poor sanitation in preventing stunting (Ribek, 2021). The most decisive intervention to reduce the prevalence of stunting is the intervention carried out on 1,000 HPK children under five. Stunting intervention requires the convergence of programs and synergistic efforts of the government, the business world, and society.

Efforts by educational institutions to carry out beneficial activities in the community, one of which is baby massage as a form of preventing stunting in children under five (Budiastutik & Nugraheni, 2018). The government's efforts to collaborate to accelerate the handling of accelerated reduction in stunting directs the potential for early detection in the North Jakarta area, which must be carried out with a multi-sector approach through synchronizing programs at both national and local levels and involving family independence. Meanwhile, community participation takes the form of outreach and education activities to reduce stunting (Rasumawati et al., 2022).

Baby massage is one of the stimulation measures, which is given from an early age by parents or family to their children to obtain optimal development and growth in an effort to prevent stunting. Baby massage is classified as stimulation because in baby massage there is an element of touch which will stimulate the function of brain cells. Apart from that, baby massage can stimulate digestive hormones, including insulin and

gaselin, so that food absorption is better. This causes the baby to quickly feel hungry so that he or she breastfeeds more often and can gain weight (Fatimah et al., 2023). Massage is a form of early intervention that is very important to support the growth and development of children under five (Adams et al., 2015). Baby massage as a growth and development stimulant will be optimal if done regularly when the baby is healthy and not sick.

According to Utami Roesli, if baby massage is done regularly, the child will be more relaxed and calm, through massaging the muscle tissue, blood circulation can increase more smoothly, or the position of the muscles can be restored and repaired automatically, improving the function of the body's organs as well as possible. Meanwhile, if the baby is massaged in the wrong way and not according to medical regulations, the side effects are swelling, bruising, pain in the baby so that the baby becomes fussy, tendon shifts, injury, and can even cause death to the baby. Therefore, many parents are reluctant to do baby massage, they are afraid of the risks of baby massage on their little ones. The risks of baby massage are usually caused by the massage practitioner's negligence in massaging, wrong massage, and the masseuse's lack of knowledge (Rasumawati et al., 2022).

Baby massage has many great benefits for babies and parents. Many parents do not want to massage their babies because they are afraid of making mistakes and endangering their babies. From the results of research conducted on baby massage training, the results of this activity show an increase in mothers' knowledge and abilities. Providing effective baby massage training to empower mothers and cadres in efforts to minimize stunting through healthy baby massage can provide optimal care for children's growth and development. The reason why mothers do not want to massage their babies independently is due to the mother's and family's lack of awareness of the importance of massaging babies, giving rise to mothers' negative attitudes and behavior towards the stimulation of baby massage. Massage stimulates the nerves which will affect the digestive system so that nutrient absorption is better. A smooth digestive process causes the stomach to empty quickly and the baby to breastfeed more often (Kennedy et al., 2020). The results of previous research showed that the first respondents who were given the baby spa intervention experienced an increase in sleep duration, where the baby spa was better at improving the quality of baby sleep than baby massage. It is hoped that mothers can apply baby spa or baby massage to overcome sleep disorders in babies (Rahman et al., 2018). Previous research also showed that babies who were given regular and directed massage experienced more optimal motor development, because baby massage could provide a stimulus for their motor development. The quality of the baby's sleep before the baby massage intervention with lavender essential oil was carried out on babies aged 3-12 months, in the five respondents the results were that the baby's sleep quality was sufficient, namely the baby slept 6 hours at night. After the baby massage intervention with lavender essential oil, the baby's sleep quality increased to 9 hours at night in the five children aged 3-12 months (Rasumawati et al., 2022).

Decree of the Minister of Health Concerning Professional Standards for Midwives who are authorized to monitor the growth and development of babies through stimulation and early detection of development. One of them is baby massage. Baby massage therapy can produce physiological changes that help hormone levels in the body play an active role. So this discovery is highly recommended for further development.

Baby massage is touch therapy and good and comfortable communication between mother and baby. This touch provides a light massage, so that the baby feels safe and comfortable. This massage can be done independently by the mother, father, or other relatives, which is the best massage because of the loving touch from parents (Adams et al., 2015). Researchers conducted a preliminary study in the Koja District Community Health Center area as an initial observation that most mothers who have babies do not yet know and have not been exposed to stimulating their children's growth and development through independent baby massage with their children in good health in the Koja District area, North Jakarta.

Knowledge is the result of knowing and occurs after someone feels a certain object. The theory put forward by Notoadmojo, health education is a health promotion media that can influence a person's knowledge (Munn et al., 2018). Where the media is one of the most important parts as a tool for conveying information, the use of media can increase public knowledge, the media can also be used for health promotion to achieve the expected goals (Meedyana et al., 2021).

The use of tools using audiovisual media has several advantages. To increase understanding, and encourage them to share what they have learned, and make the material more accessible through the senses of sight, hearing, motor, touch, or a combination of the senses of hearing and sight. These are the main ways humans obtain information. Efforts to increase the level of knowledge and behavior of mothers and family health workers, especially midwives, can provide education using audio-visual media to convey information that is easier for mothers to understand and accept (Dewi et al., 2021). Mothers were chosen as respondents in providing this education because mothers and families have a very important role in integrating their children's growth and development (Sari et al., 2018).

OBJECTIVE

The urgency of this research is to be able to analyze the influence of the mother's level of knowledge on education through audio-visual media about baby massage on the incidence of stunting, especially in children under five, where mothers who have children under five after receiving education through audiovisual about baby massage so that mothers and families grow independent to be able to do baby massage so that children grow optimally and avoid stunting. The objective of the research states the principal aim of the study.

METHODS

This research uses a quasi-experimental research design, the design used is pretest-posttest with control. Researchers only intervene in one group without using a control (comparison) group. The population in this study were mothers who had toddlers in the working area of the Koja District Health Center. Consisting of the Tugu Utara District Health Center, Rawa Badak Utara District Health Center, and Lagoa District Health Center. This study used a probability sampling technique with a sample size of 62 respondents who met the inclusion and exclusion criteria in this study. The inclusion criteria in this study were mothers who had toddlers and were willing to be respondents as well as mothers who were able to cooperate and were willing to attend until the activity was completed in completing the post-test. The exclusion criteria for this study were mothers who had sick toddlers and did not attend on time. Data collection was carried out

directly from respondents by measuring the mother's knowledge. The tool used for data collection was a questionnaire sheet to measure the mother's level of knowledge about baby massage. Efforts to prevent stunting. Collecting data at different times with the following steps: 1). The researcher explains to parents the questionnaire that will be given and how to fill it out and also the interventions that will be carried out, 2). Before the intervention, mothers were asked to fill out a questionnaire first, 3) the questionnaires were collected by the researcher and to see if there were any that had not been answered, the researcher asked again, 3). Weighing and measuring the child's height, following World Health Organization National Statistics (WHO-NCHS) standards, 4) parents are in the room and watch a video together about baby massage to prevent stunting, 5) discussion and question and answer time, 6) parents were asked to fill out a questionnaire after the intervention, 7) collected the questionnaire and gave thanks in the form of a tumbler souvenir.

An assessment of the validity and reliability of knowledge-level research instruments has been carried out, there are 25 statements with 30 respondents. After carrying out a validity test, it was found that $r_{table} = 0.3338$, which calculated $r > r_{table}$, then this questionnaire was declared valid. In testing the reliability of the questionnaire in this study, Cronbach Alpha was 0.916 with good reliability. The statistical test used is the Wilcoxon Signed Ranks test to test the hypothesis of comparing two paired samples if the data is in ordinal form.

RESULTS

The results of research in the working area of the Koja sub-district health center, North Jakarta, data collection was carried out at the Tugu Utara sub-district health center, Rawa Badak Utara sub-district health center, and Lagoa sub-district health center regarding Family Independence through Audio Visual in Stunting Prevention.

Respondent characteristics

Table 1. Characteristics of respondents according to age, gender, and occupation.

Demographics	Category	n	%
Toddler Age	≤ 2 years	53	85.48
	>2 years	9	14.52
Toddler Gender	Boy	32	51.61
	Female	30	48.39
Mother's age	<20 years	4	6,45
	≥20 -≥35 years	43	69,35
	>35 years	15	24,19
Mother's Job	housewife	48	77.42
	Private Employees	2	3.23
	Trader	1	1.61
	Others	11	17.74

Source: Processed Primary Data, 2023

The table above shows that 85.48% of toddler respondents are aged ≤ 2 years, while 14.52% of toddler respondents are > 2 years old. Toddlers are 51.61% male while 48.39% are female. Mothers aged <20 years are 6.45%, the majority of mothers whose reproductive age is $\geq 20 - \geq 35$ years are 69.39%, while mothers aged >35 years are 24.19%, and the average mother is a housewife. household at 77.42%, and others at 17.74%.

Table 2. Average distribution of mothers' knowledge before and after (pretest and posttest)

Knowledge	Mean	Std	N
Stunting			
Pretest	73,44	20,75	62
Posttest	89,35	10,69	
Baby massage			
Pretest	70,16	26,33	62
Posttest	82,42	20,78	

Table 2. shows that the average value of mothers' knowledge before being given Stunting education through audio-visual media was 73.44 with a standard deviation of 20.75, while the average value of mothers after being given education was 89.35 with Std 10.69. Meanwhile, before being given Baby Massage Education through audio-visual media it was 70.16 with a standard deviation of 26.33 and after being given the education it was 82.42 with a standard deviation of 20.78. It can be concluded that there was an increase in mothers' knowledge before and after being given education through audio-visual media, both about stunting and baby massage.

The results of statistical tests using the Wilcoxon T-Test comparing the level of knowledge of mothers before and after being given education about stunting and baby massage using audio-visual media (pretest-posttest) are as follows:

Mother's Knowledge Level		N	Mean Rank	Sum of Ranks
Post-test – Pretest Stunitng	Negative Ranks	0 ^a	0.00	0.00
	Positive Ranks	35 ^b	18.00	630.00
	Ties	27 ^c		
	Total	62		
Post test-Pretest Massage	Negative Ranks	0 ^d	0.00	0.00
	Positive Ranks	51 ^e	26.00	1326.00
	Ties	11 ^f		
	Total	62		

Source: Processed Primary Data, 2023

Negative Ranks value or the difference (negative) between the results of the mother's knowledge regarding preventing stunting/baby massage for the pre-test and post-test. From this output, it appears that both the N, Mean Rank, and Sum of Rank values for knowledge of

stunting prevention and baby massage are 0. This means that there is no decrease (reduction) from the pre-test value to the post-test value. In other words, none of the mothers who had followed the "audio-visual" learning method received a lower knowledge score on stunting prevention/baby massage than before following the "audio-visual" learning method.

Positive Ranks value or the difference (positive) between the results of the mother's knowledge regarding preventing stunting/baby massage for the pre-test and post-test. From the results of stunting prevention knowledge above, it can be seen that there were 35 positive data (N), meaning that there were 35 mothers who experienced an increase in stunting prevention knowledge results after following the "audio-visual" learning method. The Mean Rank or average increase is 18, while the Sum of Rank or the number of positive rankings is 630.

From the results of the baby massage above, it can be seen that there were 51 positive data (N), meaning that there were 51 mothers who experienced an increase in their knowledge of stunting prevention after following the "audio-visual" learning method. The Mean Rank or average increase is 26, while the Sum of Rank or the number of positive rankings is 1326. Ties value = 0, meaning there are no equal values between the pre-test and post-test.

Table 3. Based on statistical tests with the Wilcoxon T-Test on pretest and posttest respondents

	$\frac{\text{Post Test Stunting} - \text{Pretest Stunting}}{\text{Pretest Stunting}}$	$\frac{\text{Postest Baby Massage} - \text{Pretest Baby Massage}}{\text{Pretest Baby Massage}}$
Z	-5.244 ^b	-6.228 ^b
Asymp. Sig. (2-tailed)	0.000	0.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Based on the Wilcoxon test above, for knowledge of stunting prevention/baby massage, a significance value or Asymp was obtained. Sig. (2-tailed) or a p-value of 0.000, which value is smaller than the 5 percent significance level (p-value < 0.05), then the decision taken is the influence of the mother's knowledge about stunting prevention/baby massage before or after following the Audiovisual method.

DISCUSSION

The influence of audio-visual media education on baby massage on the level of knowledge among young mothers to prevent stunting. Bivariate test results using the Wilcoxon Test obtained a value of p = 0.000 or p < 0.05, where there was a significant difference between the mother's level of knowledge before and after being given education. The results of this research show that providing information about stimulating baby growth and development through audio-visual media can increase mothers' knowledge about baby massage to prevent stunting in toddlers in the working area of the Koja sub-district health center, North Jakarta.

This research follows research by (Shorey et al., 2015), there is a significant relationship, there is a change in the influence of providing education using audio-visual on knowledge after and before being given health education at Dr. Hospital. R. Hardjanto Balikpapan. Knowledge is the result of knowing that occurs after someone senses a

certain object (Woollett et al., 2021). Where sensing occurs through the five human senses, including smell, sight, hearing, and touch. Knowledge itself can be obtained from information from formal and informal education (Goudet et al., 2019). Media in providing education is one of the most important components. Where audiovisual media can provide information, and education and convey clearer and more interesting messages as a medium for conveying health education messages.

According to theory (Mirzaee et al., 2015), the best learning using appropriate and accurate learning media involving audio and visual senses can be absorbed by the brain as much as 30%. In line with the results of previous research, there is an influence of education through video media about pneumonia in toddlers on family knowledge (Winarsih et al., 2019). Media can stimulate and input information through various senses, the more that is stimulated, the easier it is to enter information. The combination of information channels through the eyes and ears will provide quite good and optimal stimulation (Rinaldi & Howe, 2012).

The results of this research are in line with previous research (Lukman, 2021) which states that education using audiovisual media is more effective in increasing cadres' knowledge compared to education using e-leaflet media. Implementing education using audio-visual media and effective modules, increases mothers' knowledge and behavior regarding giving complementary foods to babies aged 6-24 months (Dewi, 2012; Rofita et al., 2021).

The research follows previous research where audiovisual media is very effective in increasing knowledge and changing mothers' attitudes towards early detection of dangerous signs of pregnancy, childbirth, and postpartum compared to leaflet media.

CONCLUSION

Based on the research results, it can be concluded that there is an influence of education to prevent stunting and massage for healthy babies using audiovisual media on knowledge of the growth and development of children under five by stimulating healthy babies to prevent stunting in the working area of the Koja sub-district health center, North Jakarta. With a total p-value <0.05.

It is hoped that respondents can apply and carry out the knowledge that has been conveyed through audiovisual media. The importance of providing baby massage stimulation to children to achieve optimal growth and development and children grow free from stunting.

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