The influence of education by using 5J pregnancy nutrition guidebook for the prevention of fetal growth restriction and maternal nutritional sufficiency

By Fonda Octarianingsih Shariff

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The influence of education by using 5J pregnancy nutrition guidebook for the prevention of fetal growth restriction and maternal nutritional sufficiency

Fonda Octarianingsih Shariff*, Kevin Andhara Setya Prameswari, Imelda Carolia

Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

Abstract

Background: Stunting is a growth and development disorder experienced by children due to poor nutrition, recurring infections, and inadequate psychosocial stimulation. If not addressed with proper nutrition, it can lead to reduced child growth. According to the Indonesian Ministry of Health, stunting is influenced by several factors, including maternal, infant, and toddler factors, as well as social, economic, and environmental conditions. According to Global Nutrition, by 2025, it is estimated that children aged ≤ 5 years will experience stunting, with an increase of 171-314 million individuals worldwide, with 90% originating from countries in Africa and Asia. The province of Lampung has shown improvement, with a stunting prevalence of 15.2% in 2022, aiming to reach the national target of around 14%. Based on nutritional status monitoring in 2017, the prevalence of stunting was 35.20%, and according to the Indonesia Nutrition Status Study (INSS) and Community-Based Nutrition Recording and Reporting (CBNRP), the prevalence of stunting in Pesawaran in 2022 was 3.50%.
Purpose: To determine the impact of using the 5J Pregnancy Nutrition Guidebook in educating pregnant mothers about preventing fetal growth restriction on the knowledge, attitudes, and behaviors of mothers in the working area of Gedong Tataan Community Health Center, Pesawaran, Lampung.
Method: This quantitative research employed an analytical survey design with a quasi-experimental one-group pretest-posttest method. The dependent variables in this study were the level of knowledge, attitude, and behavior of mothers, while the independent variable was education using the 5J guidebook. The research was conducted in the Gedong Tataan Community Health Center, Pesawaran, Lampung in August 2023 with a sample size of 30 using total sampling technique, and a paired sample t-test was performed.
Results: Knowledge improved by 2.37 points after receiving education, with an increase difference of 1.24, and the Wilcoxon statistical test yielded a p-value of 0.000 (<0.05). Respondents' attitudes increased by 1.93 points after receiving education, although this value was in the low range, it saw a rise with a difference of 0.9, and the p-value was 0.000 (<0.05). Behavior after receiving education increased to 1.23 with an increase difference of 0.2, and the Wilcoxon statistical test showed an improvement with a p-value of 0.000 (<0.05). The test results indicate the influence of education using the 5J guidebook on maternal knowledge, attitude, and behavior.
Conclusion: Educational media using the 5J guidebook has a significant influence on maternal knowledge, attitude, and behavior regarding nutrition management in the prevention of stunting.

Keywords: Education; Pregnant Mothers; Stunting.

INTRODUCTION

Stunting is a growth and developmental disorder experienced by children due to poor nutrition, recurring infections, and inadequate psychosocial stimulation. If not balanced with proper nutrition, it can result in a decline in child growth (Scheffler, Hermanussen, Bogin, Liana, Taolin, Cempaka, & Pulungan, 2020). In Indonesia, it is estimated that 7.8 million children suffer from stunting, according to

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a report by the United Nations Children's Fund (UNICEF), placing Indonesia among the top five countries with a high prevalence of stunted children (United Nations Children's Fund, 2007).

According to the Ministry of Health of the Republic of Indonesia, stunting is influenced by various factors, including maternal, infant, and toddler factors, as well as social, economic, and environmental conditions (Komalasari, Supriati, Sanjaya, & Ifayanti, 2020). Additionally, the nutritional and health status of mothers before, during pregnancy, and after childbirth can have an impact on fetal development. Factors related to mothers, such as maternal height, closely spaced births, maternal age during pregnancy, and inadequate nutrition during pregnancy, can influence stunting (Ministry of Health of the Republic of Indonesia, 2018). Data from 2017 shows that 10.7% of Women of Childbearing Age (WCA) and 14.8% of pregnant mothers are at risk of chronic energy deficiency (CED). WCA are expected to increase their nutritional intake to achieve ideal body weight during pregnancy to avoid the risk of CED. The government's nutrition program, in accordance with Ministerial Regulation No. 51 of 2016 for pregnant women, includes the provision of biscuits containing protein, carbohydrates, linoleic acid, 11 vitamins, and 7 minerals based on nutritional supplementation standards (Ministry of Health of the Republic of Indonesia, 2018).

Stunting in toddlers can affect their intellectual growth and development. Indirectly, these effects can lead to decreased productivity, an increased risk of degenerative diseases, and an increased number of low birth weight babies in the future. These consequences can contribute to poverty and affect family food security. Stunting can result from a range of interconnected multidimensional factors (Nengsih, & Warastuti, 2020). Many factors can cause stunting, including infectious diseases, lack of knowledge, improper childcare practices, poor sanitation, poor hygiene, food security, and inadequate healthcare services. Parental caregiving practices include Early Initiation of Breastfeeding (EIB), exclusive breastfeeding, and continued breastfeeding with complementary feeding until the age of 2 years, which are essential for child growth and development (Tampah-Naah, Kumi-Kyereme, & Amo-Adjei, 2019).

Unhealthy snacks or junk food consumed by children have the potential to disrupt their growth and development. The body requires a diverse range of foods and a balanced diet to support a healthy and active life, growth, and development (Marshall, Abrams, Barbour, Catalano, Christian, Friedman, & Thornburg, 2022). Poor snack or junk food choices for children can lead to health problems due to the inclusion of harmful ingredients such as preservatives, flavor enhancers, and borax. Adequate nutrient intake for toddlers is crucial to ensure they grow according to their growth chart and prevent growth faltering, which can lead to stunting (Mertens, Benjamin-Chung, Colford, Coyle, van der Laan, Hubbard, & Arnold, 2023). Stunting is a condition in children aged 0-59 months, where height-for-age is below -2 standard deviations (<-2SD) from the World Health Organization's median standard (Tekile, Woya, & Basha, 2019).

According to Global Nutrition, by 2025, it is estimated that children aged ≤ 5 years will experience stunting, with an increase of 171-314 million individuals worldwide, with 90% originating from countries in Africa and Asia. It is also reported that toddlers in Indonesia face three nutritional problems: stunting, wasting, and overweight, potentially placing Indonesia among the 117 countries with nutritional issues. Indonesia ranks fifth, following India, China, Nigeria, and Pakistan, with the highest prevalence of stunted toddlers at 30.8%. East Java province has the highest stunting prevalence in Indonesia, at 26.7% (Umiyah, & Hamdiyah, 2021).

Lampung province has shown improvement, with a prevalence of 15.2% in 2022, aiming to reach the national target of around 14%. Based on nutritional status monitoring in 2017, the prevalence of stunting was 35.20%, and according to the Indonesia Nutrition Status Study (INSS) and Community-Based Nutrition Recording and Reporting (CBNRR), the prevalence of stunting in Pesawaran in 2022 was 3.50% (Ministry of Health of the Republic of Indonesia, 2022). In the Gedong Tataan Community Health Center, the prevalence of stunting remains relatively high, with recent data showing 25 children in Cipadang village and 14 children in Sukadadi village being identified as stunted. The health center has taken several measures, including monitoring

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Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

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and recording the weight and height of toddlers in their health and immunization cards (KIA) and reporting the number of stunted toddlers every month. Additionally, they have implemented an interesting program called NASI SEMUR (Nutrient-Rich Complementary Food for Age-Appropriate Breastfed Infants), which aims to improve the nutritional status of babies and toddlers aged 6-24 months.

The government has made numerous efforts to achieve the target of reducing the stunting rate to below 14% by 2024. Interventions have focused on pregnant women and the first 1000 days of a child's life by providing specific and sensitive nutritional interventions, starting from adolescence. However, the actual reduction in the stunting rate has not met the standards, prompting researchers to identify the primary factors related to stunting. This underscores the importance of preventing stunting in pregnant women through adequate nutrition, the prevention of fetal growth restriction, and low birth weight (Aramico, Huriyati, & Dewi, 2020).

Nutrition is a crucial part of pregnancy. Meeting the nutritional needs of pregnant women is equally important as meeting the nutritional needs of the fetus and is a prerequisite for fetal growth, maintaining placental function, and keeping the mother's condition optimal. Failure to meet the nutritional needs of the fetus is one of the causes of fetal growth restriction. One of the challenges to meeting the nutritional needs of pregnant women is the lack of information about recommended foods and dietary patterns during pregnancy. The solution to this problem is to provide easily understood and accurate information about the nutritional intake required during pregnancy (Marshall, Abrams, Barbour, Catalano, Christian, Friedman, & Thornburg, 2022). Nutritional counseling during pregnancy not only improves knowledge and understanding of nutrition but also prevents problems during pregnancy and fetal development. Adequate nutrition, such as the 5J nutrition model (Quraisy, Sineri, Haruni, & Puteri, 2022), is essential during pregnancy.

The nutrition of pregnant women includes meeting the required calorie intake, meal schedules, food types, delivery methods, and supervision. This concept is called a "Package" because these five elements of fulfillment are not done separately but as a whole for optimal results. During the brief period of pregnancy, the most critical phase is the formation of organs and the development of all supporting systems (Ningrum, Hidayatunnikmah, & Rihardini, 2020). This process requires various nutrients in adequate amounts, including carbohydrates, proteins (amino acids), fats (fatty acids), vitamins, and minerals. Failure to meet these essential nutrients during this period will affect the fetus's future life. Furthermore, the working activities of pregnant women often lead to forgetfulness or not having time to eat, potentially leading to malnutrition (Maita, Saputri, & Husanah, 2019). Therefore, the role of support and supervision from others is needed to help pregnant women consistently meet their nutritional needs, especially when faced with difficulties in eating.

Previous studies have reported that nutrition education using booklets for pregnant women can increase their knowledge of good nutrition, with a significance level of p = 0.000 (Lestari, Syarif, Hidayanty, Aminuddin, & Ramadany, 2021). One way to disseminate information related to nutrition and health during pregnancy to prevent stunting is through prenatal classes, with a minimum of three sessions, as it can influence the knowledge and attitudes of pregnant women regarding stunting prevention (Ekayanthi, & Suryani, 2019). Based on the issues mentioned above, research will be conducted on the impact of education using the 5J pregnancy nutrition guidebook on the knowledge, attitudes, and behaviors of pregnant women in preventing fetal growth restriction and ensuring maternal nutritional adequacy in the Gedong Tataan Community Health Center, Pesawaran region.

RESEARCH METHOD

This is a quantitative research study using an analytical survey design with a quasi-experimental method of one group pretest-posttest. The dependent variables in this study are the level of knowledge, attitude, and behavior of pregnant women. The independent variable is education using the 5J guideline booklet. The research was conducted at the Gedong Tataan Community Health Center, Pesawaran, Lampung, in August 2023, with a sample size of 30 participants selected using total

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Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

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sampling technique. The paired sample t-test was employed for statistical analysis.

Inclusion criteria for this study included pregnant women who were willing to participate, in their first, second, or third trimester of pregnancy, and did not have chronic diseases such as diabetes, hypertension, thyroid disorders, cardiovascular diseases, or respiratory diseases. The exclusion criteria were pregnant women who could not read or write.

The research instrument in this study was a closed-ended written questionnaire to measure the level of knowledge about nutrition and dietary patterns of pregnant women, which was modified from the FIGO nutrition checklist. It contained several questions related to demographic data of the respondents, such as the age of pregnant women, education, and income categorized as low if < Rp. 1,000,000, medium if in the range of Rp. 1,000,000 - 5,000,000, and high if > Rp. 5,000,000. BMI was categorized as underweight if < 18.5 kg/m2, normal if in the range of 18.5-24.9 kg/m2, overweight if in the range of 25.0 – 29.9 kg/m2, and obese if ≥ 30 kg/m2. The age of pregnancy was categorized into the first trimester (7 to 14 weeks), the second trimester (14 to 28 weeks), and the third trimester (28 to 40 weeks). Parity was categorized as low stunting risk if a mother had been pregnant or given birth fewer than 4 times, and high stunting risk if a mother had been pregnant or given birth 4 times or more. Additionally, there were categories for the mother's knowledge, which was considered good if the score was 6-7, fairly good if the score was 4-5, not very good if the score was 1-3, and not good if the score was 0. The mother's attitude was categorized as good if the score was 42-56, fairly good if the score was 29-41, not very good if the score was 14-28, and not good if the score was 0-13. The mother's behavior was considered good if the score was 7-9, fairly good if the score was 4-5, and not very good if the score was 1-3.

Univariate and bivariate analyses were performed, and the internal validity was tested using the person-product moment with a significance level of 5%. The criterion for a question's validity was considered valid if the calculated r-value was positive and greater than or equal to the table r-value with n=30, which was 0.361. Reliability testing was conducted on statements that had been deemed valid in the validity test using the Cronbach's alpha technique.

This research has obtained ethical approval from the Research Ethics Commission of Malahayati University with the reference number 3901/EC/KEP-UNMAL/VIII/2023.

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RESEARCH RESULTS

Table 1. Distribution of Respondents Frequency (N = 30)

Variable	Results
Age (Mean±SD)(Range)(Year)	**(1.875±1.147)(19-40)**
Education (n/%)	
Elementary School	1/3.3
Junior High School	10/33.3
Senior High School	19/63.4
Income (n/%)	
Low	15/50
Moderate	12/40
High	3/10
Body Mass Index (n/%)	
Underweight	1/3.3
Normal	13/43.3
Overweight	10/33.4
Obesity	6/20
Gestational Age (n/%)	
Trimester 1	5/16.7
Trimester 2	17/56.7
Trimester 3	8/26.6
Parity (n/%)	
Low stunting risk	28/93.3
Low stunting risk	2/6.7

Based on Table 1, it is known that the age of pregnant mothers ranges from 19 to 40 years, with an average of 1.875 and a standard deviation (SD) of 1.147. The majority of respondents have completed their education, specifically high school, with 19 (63.4%) individuals. On average, 15 (50%) of the 30 respondents have low income. The majority of pregnant mothers, as respondents, have a normal Body Mass Index (BMI), with 13 (43.3%) respondents falling into this category. Respondents' pregnancy age, on average, is in the second trimester, with 17 (56.7%) respondents falling into this category. In terms of parity, the majority of them are at low stunting risk, with 28 (93.3%) respondents.

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Table 2. Influence on The Knowledge of Pregnant Mothers (N= 30)

Variable	Min-Max	Mean	*p-value*
Knowledge			
Before	1-2	1.13	0.000
After	1-3	2.37	
Attitude			
Before	1-2	1.03	0.000
After	1-2	1.93	
Behavior			
Before	1-2	1.03	0.000
After	1-2	1.23	

Based on Table 2, it is evident that the average knowledge before being educated using the 5J Guidelines book was 1.13, falling within the range of low knowledge. After receiving education, there was an increase to 2.37 with a difference of 1.24. The Wilcoxon statistical test showed an increase with a p-value of 0.000 (<0.05), indicating the influence of education using the 5J Guidelines on the knowledge of pregnant mothers. Regarding the respondents' attitude variable, before education, it was 1.03, and after education, it increased to 1.93. Although these values fall within the low range, there was an increase of 0.9. The Wilcoxon statistical test showed an increase with a p-value of 0.000 (<0.05), indicating the influence of education using the 5J Guidelines on attitude. For the behavior of the respondents, the average behavior score before education was 1.03, categorized as low, and after education, it increased to 1.23, with an increase of 0.2. The Wilcoxon statistical test showed an increase with a p-value of 0.000 (<0.05), indicating the influence of education using the 5J Guidelines on the behavior of pregnant mothers.

DISCUSSION

Pregnancy is something that is anticipated and desired by every married couple. However, it can also bring about feelings of anxiety and worry because it involves changes in a person's body. These changes are necessary to support the growth and development of the fetus in the womb. Fundamentally, changes in the pregnant mother's body systems occur due to the influence of various hormones. Research results indicate that the majority of pregnant mothers are in the second trimester of pregnancy. A pregnant woman enters the second trimester when her pregnancy reaches 4-6 months or from 13 weeks to 27 weeks. The duration of a normal pregnancy is 280 days (40 weeks or 9 months and 7 days) calculated from the first day of the last menstrual period. Pregnancy is divided into three trimesters: the first trimester starts from conception to 3 months, the second trimester from the fourth month to the sixth month, and the third trimester from the seventh to the ninth month (Smid, Stone, Baksh, Debbink, Einerson, Varner, & Clark, 2019).

Pregnant women who experience insufficient weight gain during pregnancy have a 2.15 times higher risk of stunting compared to pregnant women with normal nutritional status at the beginning of pregnancy. The state of maternal health during pregnancy in Indonesia is currently not optimal due to the lack of a comprehensive health education system, which is still conventionally done through counseling, health facilities, medical staff, and inadequate infrastructure at both the local and central government levels (Nurdianti, Kurniawati, & Windiyani, 2020). Pregnant women who experience insufficient weight gain during pregnancy have a 2.15 times higher risk of stunting compared to pregnant women with normal nutritional status at the beginning of pregnancy. The state of maternal health

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during pregnancy in Indonesia is currently not optimal due to the lack of a comprehensive health education system, which is still conventionally done through counseling, health facilities, medical staff, and inadequate infrastructure at both the local and central government levels (Nurdianti, Kurniawati, & Windiyani, 2020).

Similar research has been conducted with the establishment of pregnancy classes as a means of learning about maternal health in the form of face-to-face group sessions aimed at improving mothers' knowledge and skills regarding pregnancy, prenatal care, childbirth, postpartum care, and newborns. The existence of pregnancy classes enables mothers to learn about managing nutrition during pregnancy, which directly improves their knowledge of stunting prevention. In this study, it was found that before the intervention, most pregnant women had poor knowledge (57.1%), but after the implementation of pregnancy classes, the majority had good knowledge (97.1%) (Ali, Dhillon, & Mohanty, 2020).

The findings from this study indicate that before the intervention, out of 30 pregnant women, 4 had good knowledge, 11 had fairly good knowledge, and 15 had poor knowledge. After the education session, 26 pregnant women had good knowledge, 4 had fairly good knowledge, and none had poor knowledge. This change occurred because initially, the respondents lacked knowledge, and after the educational intervention through the 5J Guidelines Book, there was an improvement in knowledge. The role of public health workers as promoters in promoting health is crucial in providing education to the community, especially to every mother regarding child nutrition intake. One of the programs that can act as a driving factor is empowering women, especially mothers who play a vital role in the family (Kirana, Aprianti, & Hariati, 2022). The function of public health workers includes ensuring the availability of critical epidemiological strategic information, strengthening public health institutions and infrastructure, building a strong public health laboratory network and skilled workforce, implementing public health programs, and supporting critical operational or applied research.

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Furthermore, activities in line with stunting have been conducted in the context of higher education's tridharma duties. However, the dissemination of these activities is still limited to academic journals and scientific meetings, which do not have a significant impact on evidence-based policymaking and programs. Collaboration between university lecturers and students has the potential to increase program implementation, monitoring, and impact evaluation on the community. Apart from university tridharma activities, community groups in stunting acceleration efforts can be defined as community organizations, non-governmental organizations, community mobilizers such as cadres and community facilitators, and ordinary community members. These groups often face challenges related to cooperation with the government and other partners and do not have clear guidelines for stunting reduction. The capacity of community mobilizers is still limited, and they receive inadequate incentives that could affect their quality of work. On the other hand, in today's technological age, media plays a significant role in addressing stunting issues, promoting a clean and healthy lifestyle, and gaining public acceptance for stunting interventions. The creation of social media content as a form of health promotion is still relatively low, even though social

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media has great potential for engaging young people in stunting programs. It is essential to ensure the accuracy of information circulating in the media to avoid misleading the public.

To successfully integrate stunting reduction interventions at the village or neighborhood level, policy strategies are required, such as the formation of consortia or stunting care forums, the maintenance of knowledge channels, the preparation of technical guidelines or operational regulations by all stakeholders, the promotion of stunting mitigation interventions as a priority program in each region, and the enhancement of human resources capacity at the district, sub-district, and village levels to conduct stunting causality analysis and program development.

Knowledge is the result of knowing, and it occurs after people perceive a specific object. Perception occurs through human senses, such as vision, hearing, smell, taste, and touch. Most of human knowledge is obtained through the eyes and ears. Knowledge, or cognitive knowledge, is a crucial domain in shaping a person's actions. Several factors influence knowledge, including education, mass media (information), socio-cultural and economic factors, environment, experience, and age (Notoatmodjo, 2012).

Researchers found that respondents are aware of the prevention of stunting, but among them, some have very limited knowledge of stunting, only knowing that stunting is dangerous and lacking extensive knowledge of its prevention. Based on the respondents' statements, there has been no counseling on stunting prevention using the 5J Handbook and creating meal plans as an example. Respondents expressed the view that education like this is very engaging because, generally, health education through lectures can lead to quick boredom and monotony.

Based on the results of the Wilcoxon statistical test, it is known that there is an influence on knowledge before and after education using the 5J Handbook. This can be seen from the p-value of 0.000, which means that the null hypothesis (H0) is rejected ($p < 0.05$), indicating the influence of education through the 5J Handbook. This study is also in line with previous research on changes in knowledge and attitudes of pregnant women towards exclusive breastfeeding for stunting prevention using booklet media. The results of this research show that before education, the average knowledge score is 46.55, and the attitude score is 54.45, while after education, the average knowledge score is 50.65, and the attitude score is 61.05 in the booklet group (Asri, Sorachmmad, Reski, & Ashari, 2023).

At the beginning, before the education session, respondents were asked to fill out a questionnaire with questions about the benefits of balanced nutrition for pregnant women. Many respondents did not know the benefits of balanced nutrition for pregnant women. After the education, including explanations about the benefits of balanced nutrition for pregnant women, such as helping the growth of organs and the nutrition needed for fetal development and maternal health, knowledge about this improved, accompanied by changes in nutritional attitudes and behaviors such as meal planning. Pregnancy classes or counseling during prenatal visits are expected to have specific sessions or guidelines to help pregnant women assess, prepare, and evaluate their nutrition or food intake according to their capabilities and economic sufficiency.

In improving education for pregnant women regarding stunting through counseling programs, it was found that pregnant women became more aware of the importance of meeting nutritional requirements during pregnancy to avoid various health problems both during pregnancy and after childbirth. This was evidenced by pregnant women becoming aware of a nutritious daily meal menu for health and how to plan their meals (Porter, Cox, Wright, Lawrence, & Gillison, 2022).

Univariate analysis shows that the average attitude before education is 1.03, and after it is 1.93, with an average increase of 0.9. Based on the results of the study with 30 samples, the average score before receiving education through the 5J Handbook on maternal nutrition is expected to help reduce the stunting rate. Before education, most pregnant women had a good attitude, with 28 people, and the rest were rated as satisfactory. After the treatment, 29 pregnant women had a good attitude, one had a satisfactory attitude, and none had a poor attitude.

This research is also in line with previous research with 42 respondents stating that the

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average attitude in the treatment group before education was 43.52, while after education, it was 47.45, indicating that the knowledge category improved significantly (Anjani, Anggraini, Setyawati, Aprianti, & Indriati, 2022). Another study found that the average attitude in the treatment group before and after counseling was 36.62 and 40.38, respectively. Based on these results, it can be seen that the mean attitude after counseling in the post-test was higher than the pre-test, with a difference of -3.76. These results show that audiovisual media and leaflets can be used as tools for educating about improved nutrition (Meidiana, Simbolon, & Wahyudi, 2018).

The research aims to identify changes in attitudes before and after education. Attitude reflects an individual's feelings of liking, disliking, or neutrality toward something. Attitudes can be positive, negative, or neutral, depending on the individual's feelings. Attitudes involve an inclination to act regarding a specific object (Suprapto, Mulat, & Hartaty, 2022). Based on the statistical analysis, it is known that there is an influence on attitudes before and after education with a p-value of 0.000, indicating the impact of education using the 5J Handbook. Before education, respondents were asked about how they manage their eating patterns and nutritional intake. 28 (93%) respondents did not provide a clear answer on how maternal nutritional intake is well met.

There was also a change in behavior after receiving education through the 5J Handbook on maternal nutrition, with meal plans made in the data collection period. Pregnant women in this area admitted that they had never created meal plans before, even with a handbook for preventing stunting. In the research results, out of 30 pregnant women, before the treatment, 23 displayed good behavior, and 7 had satisfactory behavior. After the treatment, 29 had good behavior, one had satisfactory behavior, and none displayed poor behavior. A previous study indicated a significant change in the average attitude before and after receiving health education using demonstration, booklet, and video methods (Fazrin, Anggraeni, Saputro, & Yalestyarini, 2021).

Stunting is caused by multiple factors. Direct causes are related to inadequate food intake and infectious diseases. Other factors include a lack of maternal knowledge, improper childcare, poor sanitation and hygiene, and inadequate healthcare. Additionally, the community may not realize that short stature in children is a problem, as they often view short children as having normal activities and not in need of intervention, unlike underweight children. Similarly, the nutrition of pregnant women is not recognized by society as being important, contributing to the nutrition status of the baby they will give birth to later (Ekayanthi, & Suryani, 2019). Various efforts by the government to minimize stunting cases in Indonesia are implemented in the Minister of Health of the Republic of Indonesia's Decision No. HK.01.07/Menkes/1928/2022 on Health Services for Stunting Management and Presidential Regulation of the Republic of Indonesia No. 72/2021 on Accelerating Stunting Reduction. Good health education is provided through various means, including health worker counseling, empowering Indonesian women, improving human resources, and other audiovisual media.

Based on the results of statistical tests, it is known that there is an influence on behavior before and after being educated through the 5J Handbook. This is consistent with previous research that showed a significant change in maternal behavior of baby massage before receiving health education using demonstration and booklets. This can be seen from the change analysis results, which indicate a p-value of 0.000 (<0.005) (Meidiana, Simbolon, & Wahyudi, 2018). Behavior is an individual's response to a stimulus or an action that can be observed and has specific frequency, duration, and purpose, whether conscious or not. Behavior is a collection of various interacting factors. Often, we don't realize that these interactions are very complex, so sometimes we don't have the opportunity to think about why someone exhibits a particular behavior. Therefore, it is very important to examine the reasons behind an individual's behavior before being able to change that behavior (Wawan & Dewi, 2011).

The problem of malnutrition, especially stunting, can be caused by inadequate nutritional intake in infants. Inadequate nutritional intake is not solely due to issues of food availability or not but is also related to economic conditions, poor living environments, and a lack of maternal knowledge about nutrition

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Corresponding author email: *fondashariff@malahayati.ac.id

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(Zairinayati & Purnama, 2019). A lack of awareness about the importance of nutrition leads to a lack of effort in preventing stunting. Therefore, a person's level of nutritional knowledge will affect their attitude and behavior. If a person's nutritional knowledge is high, they are more likely to have good nutritional attitudes and behaviors. Furthermore, inappropriate complementary feeding is a factor influencing stunting. This is consistent with previous research showing a relationship between complementary feeding and the occurrence of stunting, with a p-value of 0.00 and an Odds Ratio of 0.083 in stunted children (Rilyani, Wandini, & Lestari, 2021). Other studies have also been conducted, showing that factors other than knowledge and attitudes affecting stunting are related to complementary feeding (Lestiarini & Sulistyorini, 2020).0).

CONCLUSION

There is a significant influence between knowledge, attitudes, and behaviors on education using the 5J Handbook as an effort to prevent stunting in the working area of the Gedong Tataan Health Center, Pesawaran.

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Fonda Octarianingsih Shariff*, Kevin Andhara Setya Prameswari, Imelda Carolia

Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

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Fonda Octarianingsih Shariff*, Kevin Andhara Setya Prameswari, Imelda Carolia

Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

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Fonda Octarianingsih Shariff*, Kevin Andhara Setya Prameswari, Imelda Carolia

Fakultas Kedokteran, Universitas Malahayati
Corresponding author email: *fondashariff@malahayati.ac.id

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