

## Enhancing Nutrients Knowledge during Pregnancy through Webinars to Prevent Stunting

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### ABSTRACT

**Background:** Indonesia still has a high stunting rate, 1.2 million out of 5 million births each year result in stunted baby growth. linear growth in utero, the process can be caused by maternal malnutrition, which can result in intrauterine growth inhibition and low birth weight and result in stunting. This study aims to analyze the effectiveness of the webinar in improving nutrition knowledge during pregnancy to prevent stunting growth.

**Subjects and Method:** This is a cross sectional study conducted in July, 15<sup>th</sup> 2022 using the Zoom Meeting webinar platform. Target population are all young POGI and POGI Members who took part in webinars and online conversations using the Zoom Meeting program. This study used random sampling, and sample size are 161. The independent variables of this study was learning via webinars while the dependent variable was nutrient knowledge. Data were analyzed by paired t-test statistical test.

**Results:** There was a significant difference score of knowledge in pregnant women after (Mean= 8.60) compared to before webinars (Mean= 6.52).

**Conclusion:** The result of this study indicates that learning method via webinars increased maternal understanding about optimal nutrient during pregnancy.

**Keywords:** stunting, nutrients, webinar, pregnant women

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### BACKGROUND

Due to inadequate nutrition, recurrent illnesses, and insufficient psychological stimulation, children who stunt endure growth problems. Stunted kids are those whose height for age is more than two standard

deviations below the WHO Child Growth Standards, determined as a height-for-age z score (HAZ) 2 SD below the median (de Onis and Branca, 2016; Prendergast and Humphrey, 2014).

Despite a decline in stunting rates

over the past few decades, 144 million children under the age of 5 were expected to be stunted worldwide in 2019. With significant differences in 2019 ranging from 34.5% in East Africa to 4.5 percent in East Asia in comparison to 1990, there were 109 million fewer stunted children worldwide 2019 (Vaivada et al., 2020). Stunting is still a common occurrence in Indonesia. According to statistics, 1.2 million babies are born each year with one of the five diseases that cause stunting. Indonesia still has a greater frequency of stunting than other Southeast Asian nations like Vietnam (23%), Malaysia (17%), Thailand (16%), and Singapore (4%). Although the national stunting rate decreased by 1.6% annually from 27.7% in 2019 to 24.4 percent in 2021, according to the Indonesian Nutrition Status Study (SSGI) conducted by the Ministry of Health and the Central Bureau of Statistics, this number is still higher than the WHO's 20% threshold (Rokom, 2021).

In Indonesia, there are numerous potential reasons for stunting, including things that happen before and during pregnancy (Permatasari et al., 2021). Since stunting can occur in the womb, pregnant women must start providing their unborn children with proper nutrition. Intrauterine growth restriction and low birth weight can come from the mother's malnutrition, which inhibits the linear growth process in the womb (Vaivada et al., 2020).

Pregnant women who do not consume proper nutrition, which includes consuming a variety of foods and getting enough carbs, protein, fat, vitamins, and minerals, are more likely to experience maternal malnutrition (Titaley et al., 2013). Maternal nutritional status, breastfeeding habits, complementary feeding habits, exposure to infections, and external factors such as parental education, food systems, health care, water, sanitation, and infrastructure

are all considered postpartum factors (Beal et al., 2018; Khan et al., 2019; Torlesse et al., 2016)

Due to its significant influence on the health of the fetus it harbors, pregnant women's nutrition is one of the areas of focus for community nutrition improvement programs (Marshall et al., 2022). Pregnant women require more nutrition than non-pregnant people. In this situation, it is essential to remember that pregnant women should eat a variety of balanced foods in both quantity and proportion.

Chronic energy insufficiency is a dietary issue that pregnant women frequently experience (KEK). The frequency of the risk of CED in pregnant women (15-49 years old) was still relatively high at 17.3 percent, according to the Basic Health Research (Riskesdas) study from 2018. Approximately 1.5% will be fewer pregnant women with SEZ each year. Based on information from routine reports in 2020 gathered from 34 provinces, it can be deduced that of the 4,656,382 pregnant women who had their upper arm circumference (Lila) measured, 451,350 had a Lila of less than 23.5 cm (experiencing the risk of KEK). These projections lead to the conclusion that 9.7 % of pregnant women will be at risk for SEZ in 2020, while the target for 2020 is 16% (Kemenkes RI, 2019).

Early childhood stunting, especially in the first 1000 days from conception to the age of two, has negative short- and long-term effects on the kid (Beal et al., 2018). There are also many effects of obesity in childhood, including an increase in morbidity and mortality, a decline in cognitive and thinking ability, an increase in infection risk, a decline in productivity in later life, and chronic nutrition-related diseases in adulthood (Elshamy et al., 2020; Soliman et al., 2021).

Given the significance of maternal

nutrition and nutritional status in the development process, including the severity of the effects of stunting, health workers, who are at the forefront of the healthcare industry, have a crucial role to play in understanding nutrition to prevent stunting from the womb. Due to the lack of interest in researching nutrition, expectant mothers will gain valuable information on healthy eating through the nutrition webinar. This is because there are still many people who believe that pregnant women can get all the nutrition they need from their regular diet, ignoring the fact that some pregnant women have trouble eating because of nausea and vomiting brought on by hormonal influences from the beginning of their pregnancy.

As a result, nutritional issues need to be thoroughly researched, especially to prevent stunting. This study aims to analyze the effectiveness of the webinar in improving nutrition knowledge during pregnancy to prevent stunting growth.

**SUBJECTS AND METHOD**

**1. Study Design**

This is a cross sectional study conducted in July, 15<sup>th</sup> 2022 using the Zoom Meeting webinar platform.

**2. Population and Sample**

Target population are all young POGI and POGI Members who took part in webinars and online conversations using the Zoom Meeting program made up the sample for this study. Sampling technique random sampling, and sample size are 161.

**3. Study Variables**

The independent variables of this study was learnt via webinars while the dependent variable was nutrient knowledge.

**Table 1. Sample Characteristics**

Sample	N	%
POGI member	101	62.73%
Young POGI member	60	37.27%

**4. Operational Definition of Variables**

**Learning via webinars** is teaching and learning activities such as a seminar, conducted online without face to face meeting.

**Nutrient knowledge** broadly defined, refers to knowledge of concepts and processes related to nutrition and health including knowledge of diet and health, diet and disease, foods representing major sources of nutrients, and dietary guidelines and recommendations.

**5. Study Instruments**

This study used an online Google Form questionnaire to encourage participants' understanding and knowledge of the material. This study tested the validity and reliability of the questionnaire to demonstrate its scope.

**6. Data analysis**

In July 2022, this webinar took place. Using SPSS version 17 for Windows, pre- and post-test data were analyzed using the paired t-test.

**7. Research Ethics**

This research has obtained a research ethics permit from the health research ethics commission of Dr. Moewardi Hospital by number 556/IV/HREC/2022.

**RESULTS**

**1. Univariate Analysis**

The webinar took place on Friday, July 15, 2022, using the Zoom Meeting platform. The total sample population in this webinar was 161 participants, with the participants being POGI and young POGI members.

The Kolmogorov-Smirnov normality test result is shown in Table 1 and indicates that both groups data are normally distributed ( $p=0.20 > 0.05$ ). The investigation is then proceeded by performing a paired comparative t-test (Tables 2 and 1)

**Table 2. Results of data normality test using the Kolmogorov-Smirnov test**

	<b>n</b>	<b>Mean</b>	<b>p</b>
Pre-test	161	0.06	0.200
Post-test	161	0.05	0.200

**2. Bivariate Analysis**

The results in Table 3 show that the average knowledge result increased from (Mean= 6.52; SD= 1.07) to (Mean= 8.60; SD= 1.05) before and after the intervention. In Table 4 show that statistically, the post-test results are higher than the pre-test results with an average of 2.08 points, or between 1.89 and 2.27 points, with a significant significance

value of 0.000. indicating a significant difference between the pre-test and post-test. In this case, it can be concluded that each variable received a significant treatment. As a result, participants' knowledge of pregnancy to prevent stunting increased significantly after attending a nutrition webinar.

**Table 3. Average results of pre-test and post-test**

	<b>Mean</b>	<b>N</b>	<b>SD</b>	<b>SE</b>
Post-test	8.60	161	1.05	0.08
Pre-test	6.52	161	1.07	0.09

**Table 4. Comparative test results with paired t-test**

	<b>Mean</b>	<b>SD</b>	<b>SE</b>	<b>95% CI</b>		<b>p</b>
				<b>Lower limit</b>	<b>Upper limit</b>	
Post-test - Pre-test	2.08	1.22	0.10	1.89	2.27	<0.001

**DISCUSSION**

As a result of the preceding findings, webinars often have a substantial impact on participants' understanding of pregnancy nutrition and stunting prevention. Additionally, more participants saw their post-test scores rise compared to their pre-test scores. A meta-analysis demonstrating webinars' value for knowledge expansion is relevant to the findings of this study. The pre-test and post-test results demonstrate the webinar's significant favorable influence. Comparing the efficiency of webinars to other learning environments also reveals positive outcomes. There are different types of webinars, which vary in their length, how they deliver instructions, how they utilize technology, and whether they are single or repeat presentations (Gegen-

furtner and Ebner, 2019).

The findings of this study are consistent with research was done by Purbowati et al. (2021) on the effectiveness of webinar based instruction for teenagers, expectant mothers, and Posyandu cadres in preventing stunting. The outcomes of the participants pre-and post-tests, which were administered before and after they attended the webinar, significantly improved according to this study. This indicates that participants' understanding of the topics covered in the webinar has increased.

The findings are also relevant to research conducted by Yo et al. (2021) that looked at how well-liked and successful webinars were for health professionals to use as a learning tool to get more knowledge. 3,607 healthcare workers in all were

examined. In general, they demonstrated excellent satisfaction. Additionally, based on the results of the pre-and post-tests, it was evident that there had been a notable improvement in understanding of the issues covered in the webinar (Yo et al., 2021).

The prevention of stunting is largely the responsibility of young POGI and POGI members working as health care workers, notably expectant moms and nursing mothers. To stop stunting, health professionals primary responsibilities include serving as motivators, facilitators, counselors, and communicators. Furthermore, the most significant and crucial role is primarily played by offering education and targeted nutrition interventions that are suitable for a child's first 1000 days of life (Prastiwi et al., 2020). To keep their expertise current, health professionals must receive ongoing education.

In general, webinars can make it simpler for medical practitioners to update their knowledge. Instructional approaches will inevitably shift from offline to online in light of the ongoing COVID-19 pandemic. However, it has been demonstrated that using webinars or video conferences to study is not a barrier to health professionals learning more. In addition to being simple to follow from anywhere, learning through this webinar is typically less expensive because it doesn't take much time and effort to complete (Reeves et al., 2017).

The implementation of the webinars with the theme "Nutrition in Pregnancy to Prevent Stunting" can be concluded to increase participants understanding of pregnancy nutrition to prevent stunting as measured through pre-test and post-test. This increase can be seen in the average post-test results when compared to the average pre-test results. Increasing the understanding of health workers who

attend the webinar on pregnancy nutrition in preventing stunting is expected to improve services and prevention of stunting.

#### **AUTHOR CONTRIBUTION**

Muhammad Adrianes Bachnas is the main researcher who formulated conceptual framework. Sri Sulistyowati, Eric Edwin Yuliantara, Nutria Widya Purna Anggraini, and Wisnu Prabowo examined conceptual framework and methodology of the study. Supriyadi Hari Respati gave the suggestion related to the discussion. Hafi Nurinasari, Robert Ridwan, Lini Astetri, Saffana Oka Yuliani, Dinda Carissa, Meuthia Alamsyah plays role in processing and collecting data of the study.

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#### **CONFLICT OF INTEREST**

This research is sponsored by Universitas Sebelas Maret. I have disclosed those interests fully to the Journal of Maternal and Child Health, and have in place an approved plan for managing any potential conflicts arising from this arrangement.

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