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Pemberian Makanan Tambahan (PMT) in Cikondang Village for stunting preventions

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ABSTRACT

Stunting is a problem that causes toddlers to experience growth failure due to insufficient nutrient intake from pregnancy to the age of 24 months. Indonesia has shown a prevalence of stunting over the past decade, with recent efforts aiming to reduce it to 14% by 2024. This community service discusses various factors contributing to stunting and explores the implementation of Supplementary Feeding Programs (PMT) as a preventive measure. The study focuses on Desa Cikondang, where PMT was conducted to prevent stunting and educate the community on proper nutrition for toddlers. Through these community services, including planning, implementation, and evaluation, the study engaged with local stakeholders and observed significant results. The PMT initiative, featuring corn porridge and fruits like papaya and bananas, saw a notable increase in participation, indicating its effectiveness in preventing stunting. Despite coordination and resource allocation challenges, the community services demonstrated the importance of community involvement and targeted interventions in addressing stunting. The findings underscore the significance of early prevention efforts and community empowerment in combating stunting, with implications for similar initiatives across Indonesia.

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ABSTRAK

Stunting merupakan masalah yang menyebabkan balita mengalami kegagalan pertumbuhan akibat kurangnya asupan gizi sejak kehamilan hingga usia 24 bulan. Indonesia telah menunjukkan prevalensi stunting selama satu dekade terakhir, dengan upaya terbaru yang bertujuan untuk menurunkannya menjadi 14% pada tahun 2024. Pengabdian ini membahas berbagai faktor yang berkontribusi terhadap stunting dan mengeksplorasi penerapan Program Pemberian Makanan Tambahan (PMT) sebagai upaya pencegahan. Fokus kegiatan pengabdian di Desa Cikondang, di mana PMT dilakukan untuk mencegah stunting dan mengedukasi masyarakat mengenai gizi yang baik pada balita. Dalam pengabdian ini menggunakan tahapan yang terdiri dari perencanaan, pelaksanaan, dan evaluasi, studi ini melibatkan pemangku kepentingan lokal dan memperoleh hasil yang signifikan. Inisiatif PMT, yang menampilkan bubur jagung dan buah-buahan seperti pepaya dan pisang, mengalami peningkatan partisipasi yang signifikan, yang menunjukkan efektivitasnya dalam mencegah stunting. Meskipun terdapat tantangan dalam koordinasi dan alokasi sumber daya, studi ini menunjukkan pentingnya keterlibatan masyarakat dan intervensi yang ditargetkan dalam mengatasi stunting. Temuan ini menggarisbawahi pentingnya upaya pencegahan dini dan pemberdayaan masyarakat dalam memerangi stunting, yang mempunyai implikasi terhadap inisiatif serupa di seluruh Indonesia.

Kata Kunci: Desa Cikondang; stunting; pemberian makan tambahan

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INTRODUCTION

Stunting is a problem that causes toddlers to experience growth failure due to a lack of nutritional intake from pregnancy to 24 months of age. According to Hasanah *et al.* (2023), Stunting is a growth and development disorder in infants caused by long-term malnutrition, which can occur from pregnancy to 24 months of age, in line with what is stated about stunting by Utami *et al.* (2023), , stunting is a problem that affects a child's growth and development from the early stages to the third stage and becomes a pattern that must be understood by mothers and children, where nutritional intake is crucial. Indonesia is one of the countries that has shown a prevalence of stunting over the last 10 years, indicating that stunting is one of the most significant nutritional problems among infants in Indonesia. The results of the Basic Health Research (Riskesdes) in 2018 showed a prevalence of stunting in children under five years of age (infants) of 30.8%, which decreased to 27.67% in 2019 and further to 24.4% in 2021 (see: <https://www.badankebijakan.kemkes.go.id/buku-saku-hasil-studi-status-gizi-indonesia-ssgi-tahun-2021/>). The target for 2024 is to reduce this figure to 14%. Cianjur Regency is one of the districts in Indonesia that has successfully reduced the stunting rate.

Based on the results of the 2022 Indonesian Nutrition Status Survey (SSGI), the prevalence of stunting in Cianjur Regency decreased from 33.7% in 2021 to 13.6% in 2022 (see: <https://dinkes.cianjurkab.go.id/berita/penghargaan-kepada-kabupaten-cianjur-dalam-penanganan-stunting>). *Stunting* has long-term impacts that are closely related to low human resource quality, namely low intelligence, increased risk of non-communicable diseases, and *stunting* in adulthood. Additionally, the TNP2K report in 2017 explained that there are four factors influencing the occurrence of stunting: 1) lack of parental knowledge about nutrition before and during pregnancy and after childbirth; 2) inadequate quality of antenatal care and postnatal care services; 3) limited access to nutritious food due to relatively high prices of nutritious foods; 4) lack of access to clean water and sanitation, which contributes to recurrent infections that impact child development.

In another study discussing stunting, several surveys were conducted on the factors causing stunting in toddlers. The study conducted by Safitri *et al.* (2021) discussed the factors associated with the incidence of stunting during the COVID-19 pandemic, which was conducted through a survey on the condition of toddlers and the fulfilment of nutritional needs by mothers. The survey asked about factors that cause stunting in toddlers, such as birth weight, breastfeeding status, respiratory infection status, and diarrhoea. It was found that toddlers did not experience stunting because their mothers provided adequate nutrition. In line with the study conducted by Komalasari *et al.* (2020), the purpose of the study was to identify factors that influence stunting. The current study is a preventive study aimed at reducing the incidence of stunting by providing PMT in a village indicated to have stunting. This study is relatively new, having been conducted in only one village, Cikondang, which presents a challenge in determining the results of the study.

Cikondang is a village that faces significant challenges in accessing nutritious food. However, this has not deterred the local community from ensuring adequate nutrient intake, as they are well aware of the importance of nutritious food in preventing stunting among infants. This is evident from Posyandu data, which shows that Cikondang had 416 infants in August 2023, with a stunting rate of 0%. To maintain this 0% rate, the posyandu in Cikondang Village is supported by students from the UPI Thematic Community Service Program (KKN) conducting a Supplementary Feeding Program (PMT) for infants, expectant mothers, pregnant women, and breastfeeding mothers as part of recovery efforts and stunting prevention. The Supplementary Feeding Program (PMT) involves providing nutritious meals to infants and pregnant women, along with supporting activities that prioritize food safety and quality and ensure the meals meet nutritional requirements. The objective of this community service initiative is to make the supplementary feeding program an effective form of prevention and recovery from stunting among infants.

Literature Review

The community service activities conducted outlined several issues related to the topic of discussion, with a particular focus on stunting, which is prevalent in remote areas that the local government has not yet reached. The activities we conducted included providing supplementary food in those areas, with assistance from local health posts or village officials, to facilitate coordination and the dissemination of information on how to address stunting and implement early prevention measures before it occurs in those areas.

Stunting

Stunting is a reasonably common problem and has even become a serious issue, according to [Simamora et al. \(2019\)](#) Stunting is a chronic malnutrition problem caused by a prolonged lack of nutritional intake, resulting in growth disorders in children, namely a height that is lower or shorter (dwarfism) than the standard for their age. In reality, cases of stunting are indeed associated with malnutrition, and this problem is commonly found in villages that the government does not reach. Additionally, it is known that the prevalence of stunting among infants and toddlers exceeding 20 percent in a particular area indicates the ongoing presence of chronic malnutrition and public health issues. ([Simanjuntak et al., 2022](#); [Wardani et al., 2021](#)). This indicates that there are still many areas in Indonesia that lack understanding of how to prevent stunting.

In addition, several factors contribute to stunting, including those that cause it. By better understanding the factors that cause stunting, we will be able to prevent unwanted outcomes. According to [Salamung et al. \(2019\)](#), stunting is caused by family income, socio-cultural factors, economic policies, family support, and the environment. The primary cause of stunting is inadequate nutrition during pregnancy, where insufficient nutrient intake affects the fetus ([Ilmani & Fikawati, 2023](#); [Krisnana & Widiani, 2020](#); [Widayati & Dewi, 2021](#)). In this case, it can be understood that stunting is a problem that can be addressed in the early stages of pregnancy. In addition to these factors, some indicators serve as a reference in assessing toddlers who are indicated as stunted. Risk factors for stunting include the child's gender, birth length, birth weight, medical history, history of exclusive breastfeeding, history of complementary feeding, history of basic immunization, mother's age at delivery, mother's height, parents' education, parent's occupation, and family income ([Amin et al., 2024](#); [Mardiyana et al., 2022](#); [Nursyamsyah et al., 2021](#)).

Supplementary Feeding Program (PMT)

Supplementary Feeding Program (PMT) is among the efforts undertaken by the government to reduce the prevalence of malnutrition in Indonesia. This activity involves providing nutritional intake in the form of staple foods or ready-to-eat meals to those in need. The government's efforts to address malnutrition include implementing the Supplementary Feeding Program (PMT) for the recovery of malnourished infants ([Doren et al., 2019](#); [Setiowati & Budiono, 2019](#); [Subardiah et al., 2020](#)). Additionally, according to [Rohmah \(2020\)](#), this program is a nutritional supplementation program in the form of supplementary food with a special formulation fortified with vitamins and minerals as an addition to the main diet for the target group to meet their nutritional needs. This means one of the solutions to the existing malnutrition problem in Indonesia is to provide PMT, which can be assessed regarding the duration of its implementation by the government.

Supplementary Feeding Program (PMT) promoted by the government requires attention to several aspects, one of which is the type of food or staple food to be provided to people who are indicated as malnourished. Nutritionists and village midwives carry out food selection. Supplementary food is provided

for all ages or standardized and adjusted to the general needs of children. Posyandu Madya provides additional items such as sugar, oil, and eggs, determined by the village midwife, while Posyandu Mandiri does not provide any additional items (Putri & Rahardjo, 2021). In line with what was explained by Waroh (2019) the provision of supplementary food for vulnerable groups includes infants aged 6-24 months in the underweight category, namely infants with a weight-for-height measurement (BB/PB) less than minus two Standard Deviations (-2 SD), school-age children categorized as underweight, and pregnant women with chronic energy deficiency, defined as pregnant women with an Upper Arm Circumference (UAC) measurement less than 23.5 cm. The ideal duration of supplementation is 180 days (twice a week). This indicates that the effectiveness of the supplementary feeding program is highly significant and conducted regularly, serving as an incentive for implementing such programs in villages not yet reached by the government and raising awareness among local officials to educate residents about this initiative promptly.

METHODS

This community service was carried out in several stages, namely, planning, implementation, and evaluation. The Supplementary Feeding Program at the Cikondang Village Health Center aimed to prevent *stunting* and provide knowledge to parents about nutritious food intake for toddlers. Observations were conducted by interviewing and gathering information from village residents and Posyandu staff by UPI Thematic Community Service Program students. The purpose of these observations was to obtain data on toddlers indicated as stunted. The follow-up results of the observation data were to provide supplementary food to village residents, which would later become an indicator of our success in this community service by providing supplementary food to several residents to prevent stunting.

The importance of preventing stunting and the potential for future activities have inspired the community to learn more about and understand the importance of proper nutrition for infants to avoid stunting. The UPI Thematic Community Service Program students in Cikondang Village conducted various activities, including planning, implementation, evaluation, report writing, and publication.

RESULTS AND DISCUSSION

Planning

In the planning phase conducted by our team, we coordinated with the Village Head and the local Posyandu Head to determine the time and place of implementation, as well as the targets of the activities. This was done so that later, during the implementation, there would be no deviations from the plan or anything that was not in line with what would be applied in this community service program. In this planning process, we not only consider the time, location, and field conditions but also plan the appropriate food items that meet the village's needs and are affordable. The planning resulted in corn porridge and several fruits, such as papaya and bananas. The selection of these foods is in line with WHO recommendations for people suffering from malnutrition, which include ingredients such as milk, oil, sugar, flour, and water (Choudhary *et al.*, 2021; Grujić & Odžaković, 2021). In addition to the WHO formula, according to Karlina (2020) the Supplementary Feeding Program (PMT) can also be provided in the form of a modified formula to ensure adequate energy and protein availability. The modified formula is made from ingredients that are easily accessible in the community and affordable.

During the planning phase, observations were conducted, and direct participation in Posyandu activities was carried out at four Posyandus in Cikondang Village: Harapan Posyandu, Kartini Posyandu, Sartika Posyandu, and Srikandi Posyandu. During the observation, several activities were carried out to provide an overview of the village's conditions. One of the activities was to record the number of infants receiving PMT, which is part of the planning process. This activity was conducted to determine the approximate

number of PMT assistance packages that would need to be distributed to ensure equitable distribution. In addition, several facts were obtained in the field in the form of stunting cases occurring in Cikondang Village, namely zero stunting or no indication of stunting in the village. This became an additional issue in the planning and objectives of PMT itself, which is to prevent and educate the community on the importance of nutrition for toddlers.

After conducting several observations and planning activities, including coordination meetings with village officials and the local health post, the next step was to distribute invitations for educational sessions and inform the community. Several residents assisted in this process in accordance with the instructions from each RW (neighborhood unit) within the village.

Implementation

In this activity, counselling on the prevention of stunting was conducted through a seminar held by UPI Community Service Program students. The seminar discussed the factors that cause stunting. Various factors cause stunting, one of which is maternal factors, such as the mother's level of knowledge about nutritional status, exclusive breastfeeding practices, and complementary foods (Barir *et al.*, 2019; Saleh *et al.*, 2021). Lack of maternal understanding of nutrition, exclusive breastfeeding, and MPASI has a significant impact on children's nutritional status. Nutritional intake before, during, and after pregnancy can increase the risk of growth and development disorders, optimal brain structure and function, low productivity, and chronic diseases in adulthood (Langley, 2022; Marshall *et al.*, 2022). In line with the aforementioned, counselling was conducted to anticipate these issues. This counselling was held and delivered to mothers with toddlers, prospective brides, and pregnant women so that they would know what is needed and how to anticipate stunting.

During the implementation of this activity, counselling was also conducted to assist Posyandu cadres in data collection for infants, prospective brides, and pregnant women. This data collection aims to facilitate Posyandu cadres in providing assistance or preventive measures against stunting, which will be implemented as follow-up actions from the activities conducted by the UPI Thematic Community Service Program students. During the implementation of this activity, some PMT (nutritional supplements) were also distributed to the community of Cikondang Village. Additionally, PMT was distributed in June and July before the final distribution by the UPI Thematic Community Service Program students. Below is the data on infants who received PMT from the village midwife from June to July and those who received PMT from the UPI Thematic Community Service Program students in August 2023:

Table 1. Data on Toddlers Receiving PMT

No	Month	PMT Receiver
1	June	233
2	July	240
3	August	416

Source: Community Service 2023

In **Table 1**, two months earlier, namely June and July, PMT was held in Cikondang Village. The table shows that in June, posyandu cadres and local village officials carried it out, and 233 toddlers received PMT assistance. In the following month, July, PMT was carried out, and data showed that 240 toddlers received PMT. In the following month, August, with the assistance of students from the UPI Thematic Community Service Program, data was collected showing 416 infants, indicating that the health education provided and the data collection during the health education were disseminated evenly and exceeded the success indicators of the program. The Supplementary Feeding Program (PMT) at the posyandu is

conducted twice a week on a rotating basis. The first week is at the Harapan and Kartini Posyandus, and the second week is at the Sartika and Srikandi Posyandus. Village midwives and Posyandu cadres also assist the Supplementary Feeding Program (PMT).

The food menu selected for PMT during the counselling and distribution of PMT at the posyandu is corn porridge and fruits such as papaya and bananas. According to [Lutter et al. \(2021\)](#) corn porridge can be used as a nutritious and fiber-rich complementary food that is easy for parents to combine with other foods. For these reasons, corn porridge was chosen as PMT because it has the following benefits:

1. Source of Energy: Corn porridge is rich in carbohydrates, which are the primary source of energy for active toddlers. This helps them stay energized throughout the day.
2. Source of Fiber: Corn contains dietary fiber, which is good for digestion. This can help prevent digestive problems such as constipation.
3. Nutrient-Rich: Corn porridge contains various important nutrients such as B vitamins, including niacin and thiamine, as well as minerals like magnesium and phosphorus. All these nutrients support healthy growth and development.
4. Mengandung Antioksidan: Jagung juga mengandung antioksidan seperti beta-karoten dan lutein. Antioksidan ini dapat membantu melindungi sel-sel tubuh balita dari kerusakan oksidatif dan memelihara kesehatan mata.
5. Supports Bone Health: The phosphorus content in corn supports bone and tooth health, which is very important for toddler growth.
6. Easy to Digest: Corn porridge tends to be easy to digest for toddlers' sensitive stomachs.

The following is data on toddlers who received PMT from village midwives from June to July and received PMT from UPI thematic community service students in August 2023.

Table 2. Functional food components of corn and their health benefits.

Functional Food Elements	Base Ingredient	Health Benefits
Dietry Fiber	Corn	Preventing cancer, maintaining cholesterol and blood sugar levels, lowering hypertension, preventing obesity, etc.
Essential fatty acids	Corn	The growth and development of the nervous system, including the brain, etc.
β-karoten (pro vitamin A)	Yellow Corn	Anticancer, anti-ageing, antihyperlipidemic (pro-vitamin A), antithrombotic, antiviral, antiangiogenic
Anthocyanin	Purple/red Corn	Related to coronary heart disease, stroke, etc.
Essential amino acids	QPM Corn	Building cross-linking proteins (collagen, elastin) and biosynthetic carnitine Serotonin/nicotinamide precursor (vitamin B), etc.
Mineral	Red Corn	Red blood cell formation, etc.
Fe	Corn	Bone formation, etc.
Ca	Corn	Maintaining growth, bone health, and normal bone function
P	Corn	Maintaining normal heart rate and bone strength
Mg		Maintaining nerve health and cognitive function
Vitamin B/Thiamin	Corn	Maintaining nerve health and cognitive function
B/Niacin	Corn	Preventing pellagra

Functional Food Elements	Base Ingredient	Health Benefits
E	Corn Kernel	Antioxidant and promoting growth
Asam folat	Corn	Preventing abnormal birth
B12	Corn	Preventing anemia

Source: (Suarni & Muh, 2011)

Table 2 explains several things about the benefits of corn as a nutritious food source. The various substances found in corn provide an understanding of how good a source of nutrition corn is. This became the starting point for the planning process, resulting in significant improvements in the PMT provided to the residents of Cikondang Village.

Evaluation

This evaluation identified several issues and obstacles that arose during the implementation of the program. During the program, several issues arose, including difficulties in coordination during the planning stage, which hindered the preparation of various plans. During the implementation itself, the venue was inadequate, causing overcrowding and stuffiness. However, despite these challenges and issues, there were notable successes achieved. The PMT outreach and activities showed a significant increase in numbers compared to the previous month. This success demonstrates the importance of PMT in preventing stunting and the role of outreach as a bridge to help residents better understand the process of stunting.

Discussion

In reality, stunting is something that will occur if there is a lack of awareness among the community. Indonesia itself is one of the countries with a high rate of stunting. The percentage of stunting in Indonesia reaches 30.8 percent, which is still considered high because it exceeds the standard set by the WHO as a World Health Organization, which should be below 20 percent. This places Indonesia in the category of areas experiencing acute malnutrition (Ihromi & Saputrayadi, 2020). In the activities carried out, the PMT program strives to prevent the percentage of stunting from continuing to increase. PMT cannot run on its own, as was the case in Cikondang Village. The role of village-level stakeholders, namely the integrated health service post (posyandu) and village officials, is needed to ensure that the program runs smoothly. Several activities can be started with education using materials on stunting, followed by PMT activities so that prevention efforts can be carried out as early as possible, starting with prospective brides and grooms, pregnant women, and parents who already have children.

CONCLUSION

In reality, stunting cannot be separated from a country if there is no awareness among the community itself. The activities carried out in this program, which includes the supplementary food program (PMT) at the Cikondang Village Posyandu, aim to prevent stunting and provide knowledge to the community about proper nutrition for toddlers. The program has been implemented smoothly and has even met the success indicators set for this activity, which include the selection of corn porridge and fruits such as papaya and bananas as the menu for PMT. Corn porridge, as the main ingredient provided, has several benefits that make it a close and affordable alternative. Based on observations by students from the UPI Thematic Community Service Program in Cikondang Village, 416 toddlers were receiving PMT in August 2023, with a total stunting rate of 0%, or zero stunting.

AUTHOR'S NOTE

The author declares that there is no personal interest in writing this article and refrains from plagiarism so that this research can be considered the latest research conducted.

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