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Stunting prevention counseling and supplementary feeding in Margaasih

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ABSTRACT

The Supplementary Feeding Program (PMT) is intended to provide additional nutrition to children in need and who are growing. To prevent stunting, this Supplementary Feeding is not only given to children but also to pregnant women. The Supplementary Feeding Program must be adjusted to local conditions, especially local food conditions. The ultimate goal of this program is to ensure that children get the right nutrition so that they grow optimally and reduce the risk of stunting and other nutritional problems. We design activities in the form of counseling and making additional food. Counseling is carried out directly with a lecture method on preventing stunting, which begins with a pre-test, presentation of material, and post-test. The counseling material consists of two main materials, namely breast milk and complementary foods intended to prevent stunting. PMT can be distributed in the form of rice and fish nuggets at the end of the presentation session, which can be practiced at home by pregnant women and mothers of toddlers.

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ABSTRAK

Program Pemberian Makanan Tambahan (PMT) ditujukan untuk memberikan tambahan nutrisi pada anak-anak yang membutuhkan dan sedang dalam masa pertumbuhan. Dalam rangka pencegahan stunting Pemberian Makanan Tambahan ini tidak hanya diberikan pada anak saja melainkan kepada ibu hamil juga. Program Pemberian Makanan Tambahan perlu disesuaikan dengan kondisi lokal setempat terutama keadaan pangan lokalnya. Tujuan akhir dari program ini ialah untuk memastikan anak-anak mendapatkan gizi yang sesuai agar mereka tumbuh kembang secara optimal dan mengurangi risiko stunting dan masalah gizi lainnya. Mahasiswa peserta pengabdian merancang kegiatan berupa penyuluhan dan pembuatan makanan tambahan. Penyuluhan dilakukan secara langsung dengan metode ceramah mengenai pencegahan stunting yang diawali dengan pre-test, pemaparan materi, dan post-test. Materi penyuluhan terdiri dari dua materi utama, yakni mengenai ASI dan MPASI yang ditujukan sebagai upaya untuk mencegah stunting. Pada akhir sesi pemaparan dibagikan PMT berupa nasi dan nugget ikan yang dapat dipraktikkan di rumah masing-masing oleh ibu hamil dan ibu balita.

Kata Kunci: ASI; MPASI; pemberian makanan tambahan

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INTRODUCTION

Stunting is a serious public health issue that must be addressed. The results of the Riskesdas survey show that the prevalence of stunting has remained relatively stagnant at around 37% from 2007 to 2013. More than half of the 33 provinces in Indonesia have a prevalence rate above the national average. The significant disparity in stunting prevalence between provinces, such as DIY (22.5%) and NTT (58.4%), highlights existing inequalities and uneven development. The prevalence of berat badan lahir rendah (BBLR) or low birth weight (LBW) according to Riskesdas was 11.1% (2010) and 10.2% (2013); the proportion of short stature at birth (<48 cm) was 20.2% (2013). The proportion of exclusive breastfeeding for six months remains low (15.3%).

Children who grow and develop optimally are the foundation for a more competent human resource in the future. However, stunting has a significant impact on global health, particularly in Indonesia. Stunting is a condition characterized by inadequate nutrient intake required by the body, resulting in chronic malnutrition. Stunting is identified by the height, weight, age, and gender of infants who do not meet the standards. Stunting is one of the key targets for nutrition improvement initiatives being intensified by the government until 2025. Nutritional deficiencies in children, indicated by stunting, can be caused by inadequate food intake that fails to meet the body's nutritional needs. Stunting can be observed in infants from the womb to children aged two years (Sutarto *et al.*, 2018).

Inadequate nutritional intake in children can lead to frequent illnesses and a thin body posture that is inconsistent with the expected growth for their age. Stunting is characterized by a height below the standard, disproportionate weight, delayed motor and cognitive development, and increased disease susceptibility (Anggraeni *et al.*, 2021). Thus, stunting not only affects children's physical growth and cognitive abilities. Inadequate nutrition, poor parenting practices, and poor sanitation and hygiene cause stunting. Signs of stunting can appear as early as in utero or during pregnancy, primarily due to insufficient nutrient intake, poor eating habits, and low-quality food (Aritonang *et al.*, 2020).

Efforts to prevent stunting can be made during the mother's pregnancy, during the first 1,000 days of life or 1000 Hari Pertama Kehidupan (HPK) by providing knowledge related to stunting prevention. Mothers must also understand the importance of health and nutrition, for example, by consuming iron tablets, vitamin A, and supplementary foods or Pemberian Makanan Tambahan (PMT). The mother's diet during pregnancy is an important aspect that needs attention, as the fetus in the womb is entirely dependent on the mother. The nutritional needs of pregnant women are adjusted according to the stage of pregnancy, namely +180 kcal for the first trimester and +300 kcal for the second and third trimesters. Additionally, PMT is necessary to meet children's nutritional needs (Chen *et al.*, 2016). With proper knowledge, attitudes, and behaviours regarding stunting prevention, pregnant women's awareness of meeting nutritional needs during pregnancy will increase, influencing infant birth weight (Aliyah *et al.*, 2023).

Awareness campaigns about stunting and its prevention should be conducted to help pregnant women focus on the nutritional quality of the fetus and to increase awareness among mothers of young children about their children's growth and development (Setiavi *et al.*, 2024). Awareness campaigns for stunting prevention have been conducted by various parties in many regions, with positive impacts on the community. For example, stunting awareness campaigns in Tangerang City have increased residents' knowledge about stunting, as evidenced by pre-test and post-test results (Ahmad *et al.*, 2022). On the other hand, awareness and prevention campaigns for stunting were also conducted in Padarincang Village, Serang District, through community service activities, resulting in an increase in community awareness about the importance of balanced nutrition, particularly for pregnant women, infants, and toddlers (Widyastuti *et al.*, 2022). Based on the above issues, this community service activity implemented a PMT program for toddlers up to two years of age who visited the posyandu in Margaasih Village. The

ultimate goal of this program is to help children obtain adequate nutrition, enabling them to grow and develop optimally and reduce the risk of stunting and other nutritional issues.

Literature Review

Nutritional Intake

One factor associated with the nutritional status of infants is their nutrient intake, which can come from both macro- and micronutrients. Infant care patterns, maternal employment, and exclusive breastfeeding are also factors that influence the nutritional status of infants (Anggraeni *et al.*, 2021). Malnutrition, particularly stunting in children, is a very worrying problem in developing countries, including Indonesia. Stunting is a growth disorder characterized by a Tinggi Badan menurut usia (TB/U) or height-for-age (HAZ) z-score of less than -2 standard deviations (SD) based on World Health Organization (WHO) standards (Aritonang *et al.*, 2020). Despite some progress and developments in the health sector in Indonesia in recent years, stunting remains a significant problem. Stunting is the result of poor health and nutrition conditions, as well as the failure to achieve linear growth that should be attainable (Langi *et al.*, 2019). According to research by the Kementerian Kesehatan RI (2018), in 2013, 37.2% of children under five were stunted, including 19.2% who were short and 18.0% who were severely short. The prevalence of stunting increased to 35.6% in 2010. If children continue to follow an unhealthy diet high in calories and fat, they may develop obesity and diabetes before reaching adulthood. Suppose young children lack specific nutrients and do not meet their nutritional needs. In that case, they may experience malnutrition, which can have adverse effects on their growth and development into adulthood, known as stunting (Nugroho *et al.*, 2019).

Air Susu Ibu (ASI) or Breast Milk

ASI or Breast milk is a nutrient-rich fluid produced by the mother's breasts. The nutrients in breast milk are essential for meeting the nutritional needs of infants until they are six months old. Breastfeeding should be done exclusively, meaning the mother provides the infant with only breast milk and no additional food. Exclusive breastfeeding is one of the efforts to address stunting in infants. Additionally, breast milk can help children develop stable emotions, spiritual well-being, and good social behaviour (Roesli, 2000). Exclusive breastfeeding, along with complementary foods, should be continued until the child is two years old. Exclusive breastfeeding is crucial for the health, growth, and development of newborns, infants, and children. The benefits are even greater if breastfeeding begins within the first hour after birth, when the baby needs food and does not require additional milk. Breastfed babies are protected from death and illness. Babies who do not receive breast milk are only one-quarter as likely to suffer from diarrhoea and respiratory infections. Breast milk serves as a nutrient-rich food that provides a balanced diet tailored to the baby's needs. Consuming breast milk optimally provides benefits for enhancing the baby's immune system. During the breastfeeding phase, breast milk plays a crucial role in a child's growth, especially during the first six months. Breastfeeding should be provided optimally because breast milk is highly nutritious and meets the baby's nutritional needs. Therefore, breastfeeding is recommended until the baby is six months old and should not be mixed with other foods. Efforts to prevent stunting during breastfeeding should not only focus on the baby but also on the mother, who requires a nutritious diet to ensure good breast milk production for the baby (Wahyuningsih & Machmudah, 2013).

Complementary Foods for Breast Milk or Makanan Pendamping ASI (MPASI)

The prevention of stunting in toddlers must take into account early breastfeeding initiation, also known as Inisiasi Menyusui Dini (IMD), which involves exclusive breastfeeding until the baby is six months old and

continued with complementary foods, also referred to as Makanan Pendamping ASI (MPASI), until the toddler is two years old. MPASI are foods that supplement toddlers until they are two years old. As children grow older, their nutritional needs increase, and relying solely on breast milk may not be sufficient. Therefore, MPASI is recommended for children up to two years of age. MPASI for infants up to two years of age should include foods rich in energy, carbohydrates, protein, fat, minerals, and vitamins—for example, bananas, dragon fruit, boiled pumpkin, and boiled and mashed vegetables. The introduction of MPASI is the first stage in a child's exposure to food. The preparation of MPASI should be adapted to the child's growth and development, allowing them to gradually become familiar with food, starting with taste and texture (Langi *et al.*, 2019).

MPASI serves as a supplement to breast milk, which becomes insufficient as the child grows older. The child's nutritional needs increase with age, making MPASI necessary to meet additional requirements. MPASI also helps infants develop the skills necessary for chewing, swallowing, and adapting to new foods. Internal factors related to the mother and external factors influenced by the environment are closely associated with the provision of inappropriate MPASI. Internal factors include the mother's education, occupation, knowledge, attitudes, actions, psychological conditions, and physical conditions. External factors include culture, inadequate health care, and family (Aryastami, 2017). According to Green's theory, there are three determinants of behavioural change: predisposing factors, enabling factors, and reinforcing factors. Individuals are influenced by internal factors when they choose to provide complementary feeding. Mothers are responsible for deciding whether to provide complementary feeding to their children, whether it will be given before or after the child reaches six months of age. Mothers' knowledge about complementary feeding indeed determines their decision to provide it. A lack of education does not necessarily influence their knowledge about complementary feeding, but a lack of knowledge will influence mothers' attitudes and actions regarding complementary feeding.

Supplementary Feeding or Pemberian Makanan Tambahan (PMT)

The Supplementary Feeding Program, or Pemberian Makanan Tambahan (PMT), aims to provide additional nutrition to children in need and during their growth period. This program also encourages the prevention of stunting, which is the fulfillment of children's nutritional needs. This program is expected to optimize child development. The preparation of supplementary food must take into account several aspects, including the target audience, the type of supplementary food, food quality and safety, and the frequency of distribution. In order to prevent stunting, PMT is not only provided to children but also to pregnant women. The PMT program needs to be adapted to local conditions, particularly in terms of local food availability and accessibility. The community's ability to meet its food needs with a balanced level of nutrition is closely related to efforts to improve the quality of human resources. Lack of knowledge about food types and preparation methods can lead to malnutrition. To enhance nutrition services, the focus is on PMT Recovery, calculating nutritional needs based on body weight, which is one of the tasks carried out at health centres, identifying the type of PMT-P, showing mothers how to prepare PMT-P, explaining how to administer PMT-P (frequency and method of administration), recommending continued breastfeeding until the age of 2 years, advising the provision of complementary foods appropriate for the child's age, and promoting a balanced diet based on age and health condition. PMT-Recovery is achieved by encouraging regular monthly weighing of children. The objective of PMT is to meet the nutritional needs of mothers during pregnancy, particularly in terms of protein requirements. During the second and third trimesters of pregnancy, nutritional needs increase and fetal growth accelerates, making this the optimal time to use PMT as a nutritional supplementation program for pregnant women (Fatmawati, 2020). Nutritional management for malnourished infants is often inadequate with PMT. PMT consists of five processed food items made from tuna: otak-otak, nuggets, kaki naga, ajifurai, and rolade. Care provided to infants with nutritional deficiencies must align with the guidelines for the Management of Malnourished

Infants. In addition to the WHO formula, PMT can be provided in the form of energy- and protein-dense formulas made from easily accessible and affordable ingredients.

METHODS

First, the student participants of the community service designed activities in the form of counselling and the preparation of supplementary foods to be carried out at the RW 01 Posyandu in Margaasih Village, with the primary target audience being pregnant women and mothers of young children. Second, the participating students coordinated with the posyandu coordinator regarding the posyandu activities for August and inquired about the supplementary food menu. The educational sessions were conducted offline using a lecture method on stunting prevention, starting with a pre-test, presentation of materials, and a post-test, followed by the distribution of supplementary food. The educational materials cover two main topics: breastfeeding and complementary feeding, with a focus on preventing stunting. Additionally, at the end of the session, PMT in the form of rice and fish nuggets will be distributed to pregnant women and mothers of infants, so that they can prepare it at home.

RESULT AND DISCUSSION

PMT Menu



Figure 1. PMT preparing process
Source: Authors' Documentation, 2023

The menu selected by the student participants for the community service program is a dish made with catfish as the main ingredient. The student participants chose catfish to be processed into nuggets to increase children's appetite. Catfish is a good source of protein, low in fat, and rich in vitamins such as vitamin D and vitamin B12. Catfish contains protein (17.7%), fat (4.8%), minerals (1.2%), and carbohydrates (0.3%) (Rahayu *et al.*, 2019). Catfish is also beneficial for maintaining brain and heart health, preventing anaemia, and strengthening the immune system. Nuggets are also an appropriate catfish processing option because they have a delicious taste, high animal and plant protein content, and are easy to prepare, making them acceptable to people of all ages (Rahmawati *et al.*, 2021). Menu selection is crucial in this program because it can determine the effectiveness of PMT (Rohmah, 2020).



Figure 2. Final PMT results
Source: Authors' Documentation, 2023

In addition to catfish as the main ingredient, the participating students also combined processed fish with various vegetables such as carrots, broccoli, and corn. The participating students mixed margarine and seaweed for the rice to enhance the flavour. In the production process, fresh catfish is washed thoroughly, then separated from its bones and ground before being boiled until it reaches the desired texture. Once cooked, the ground catfish is shaped into coin-like pieces and coated with breadcrumbs. After shaping, the catfish nuggets are ready to be fried and served with stir-fried vegetables.

Socialization Activities

The health education session was conducted at the RW 01 Margaasih Village Posyandu from 8:00 AM to 11:00 AM with the main theme "Optimalisasi Pemberian ASI dan MPASI untuk Mencegah Stunting" or "Optimizing Breastfeeding and Complementary Feeding to Prevent Stunting." The event was attended by 43 participants, including two pregnant women and 41 mothers of infants. Luthfia Hastiani Muharram, S.Si., M.Si., a speaker from Universitas Muhammadiyah Bandung delivered the presentation. The content of the educational session aimed to encourage pregnant women and mothers of infants to pay closer attention to their nutritional intake, for both themselves and their children, particularly in terms of optimal breastfeeding and complementary feeding practices. These two aspects are crucial for supporting children's growth and development, especially during the first 1,000 days of life, also known as 1,000 Hari Pertama Kehidupan (HPK).



Figure 3. Counseling on breastfeeding and complementary feeding
Source: Authors' Documentation, 2023

Before presenting the material, the speaker administered a pre-test to participants to assess their knowledge. This was followed by the presentation of the material and concluded with a post-test. Additionally, the importance of providing complementary foods or additional foods for toddlers was emphasized, taking into account the nutritional content and availability of local food ingredients. The presenter emphasized that nutritious food for infants is not only obtained from expensive foods but can also be sourced from the immediate environment or local food sources, such as white and red rice, legumes, eggs, catfish, and other affordable options. It is important to convey that PMT products can be obtained from various food sources available in the surrounding area (Ahmad *et al.*, 2023).



Figure 4. Distribution of PMT
Source: Authors' Documentation, 2023

After the counselling session ended, the mothers of toddlers continued with their posyandu check-ups and received PMT prepared by students of Universitas Pendidikan Indonesia, consisting of processed rice and catfish nuggets, as an innovation in local food processing. PMT serves as one of the facilities for conducting counselling on menus that can be created for PMT (Putri *et al.*, 2024). The educational activity, part of Universitas Pendidikan Indonesia's Community Service or Kuliah Kerja Nyata Program (KKN), ran smoothly. It is hoped that pregnant women and mothers of infants will be able to apply what they learned at home in preparing additional meals to meet their nutritional needs.

Discussion

The PMT program aims to provide additional nutrition to children in need who are in their growth period. This program is expected to help reduce stunting in Margaasih Village and optimize child growth. The PMT program can help children develop optimally as long as it is implemented with proper procedures, which can help reduce stunting rates (Dewi *et al.*, 2021; Jayadi *et al.*, 2021). The PMT counselling program at RW 01 Posyandu in Margaasih Village is running smoothly, and it is hoped that pregnant women and mothers of young children will be able to practice preparing additional food to meet their nutritional needs at home. Posyandu serves as the frontline in implementing this counselling activity (Putri & Robani, 2023). PMT must consider aspects of food quality and safety, as well as the nutrient content that is appropriate for children's needs (Nelista & Fembi, 2021). Additionally, the food provided can include locally sourced ingredients, as recommended in recipes (Waroh, 2019). PMT based on local foods is an innovation to prevent stunting by improving children's nutrition through the provision of locally sourced foods (Rochmat *et al.*, 2024). In the PMT education conducted in Margaasih Village, the menu selected consisted of a dish made from catfish nuggets, served with rice and vegetables such as carrots, broccoli, and corn. Nutritional quality and adequacy can be achieved through dietary diversity, which involves consuming a variety of food groups, including staple foods, protein-rich foods, vegetables, fruits, and beverages (Rahmawati, 2024). The food provided prioritizes animal and plant-based protein sources, as well as vitamins and minerals, particularly those found in vegetables and fruits (Nelista & Fembi, 2021). To achieve a balanced diet, one meal should contain a variety of essential nutrients, including carbohydrates, fats, protein, vitamins, and minerals (Handarini & Madyowati, 2021). Not all pregnant women and mothers of toddlers have sufficient knowledge about the nutrients they need to consume daily. Therefore, there is a need for nutrition education to enable mothers to increase their knowledge about stunting (Masitah, 2022). A relationship exists between mothers' knowledge and their attitudes toward preparing nutritious meals for their children, ensuring their children's nutritional needs are met (Devianto *et al.*, 2022). However, there are challenges in educating pregnant women and mothers of young children, such as not utilizing government programs, not attending informational sessions, and even not bringing their children to health clinics for check-ups (Fadlah & Saharuddin, 2023).

CONCLUSION

Stunting is a serious problem that needs to be prevented and addressed immediately. The PMT program promotes the prevention of stunting, primarily through the fulfillment of children's nutritional needs. In order to prevent stunting, PMT is not only provided to children but also to pregnant women. The PMT program must be tailored to local conditions, particularly local food availability. The PMT program is implemented at the RW 01 Margaasih Posyandu with a menu of catfish nuggets combined with rice and vegetables such as carrots, broccoli, and corn. This program ensures that children receive adequate nutrition to grow optimally and reduce the risk of stunting and other nutritional issues. In addition to the PMT program, counselling sessions on breastfeeding and complementary feeding are conducted for pregnant women and mothers of infants. With these programs and counselling sessions, it is hoped that pregnant women and mothers of infants can apply the knowledge at home to prepare additional foods to meet nutritional needs, thereby reducing stunting rates among children.

AUTHOR'S NOTE

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