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Counseling on Education to Prevent Anemia in Pregnant Women with Banana and Dragon Fruit

Penyuluhan tentang Edukasi Mencegah Anemia Ibu Hamil dengan Pisang dan Buah Naga

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Abstract:
Anemia is one of the significant health problems in pregnant women. Anemia can cause death in pregnant women and is risky for both the mother and the fetus to be born. Anemia can be prevented from iron tablets and foods that contain high iron, as well as fruits such as Ambon bananas and red dragon fruit. This community service aims to overcome priority problems at the Cempaka Putih District Health Center, namely the high rate of low birth weight caused by anemia in pregnant women. This activity is focused on increasing the knowledge of pregnant women about preventing the risk of low birth weight caused by anemia and efforts to prevent anemia through the AKSI NGEMIL SANG NAGA program. The data that our group took was secondary data that we obtained from the Local Area Reporting (PWS) GIZIKIA at the Cempaka Putih Health Center. From these data, the results showed a high incidence of low birth weight caused by anemia in pregnant women. So, we determined this problem to be the main one in the Cempaka Putih area of this community stage. The method used in this community service is the lecture/counseling method, discussion, and demonstration, targeting pregnant women TM I-III. The results of this community service went smoothly with 15 pregnant women, one cadre, and 1 PKK Pokja IV participant. This activity began with a pretest on 15 pregnant women participants; an average pretest score of 62 points was obtained. This shows that mothers' knowledge about anemia is still lacking, so counseling was carried out on anemia in pregnant women, and demonstrations of anemia prevention efforts by consuming Ambon bananas and dragon fruit. Participants seemed enthusiastic about participating in this activity; six mothers actively asked questions. Evaluation of the activity was carried out by giving a posttest to participants. The average posttest result was 97 points. This shows an increase in good knowledge from pregnant women about anemia to prevent low birth weight. Based on the results of the activities that have been carried out, there has been an increase in pregnant women's knowledge about anemia as an effort to prevent low birth weight.

Keywords: anemia, pregnant women, ambon bananas, dragon fruit

Abstrak:
Anemia merupakan salah satu masalah kesehatan yang signifikan pada ibu hamil. Anemia dapat menyebabkan kematian pada ibu hamil dan berisiko baik bagi ibu maupun janin yang akan dilahirkan. Untuk mencegah anemia bukan hanya dari tablet tambah darah melainkan dapat dicegah dengan makanan yang mengandung tinggi zat besi dan buah-buahan antara lain yaitu pisang ambon dan buah naga merah. Pengabdian masyarakat ini bertujuan untuk mengatasi permasalahan prioritas di Puskesmas Kecamatan Cempaka Putih yaitu tingginya angka BBLR yang disebabkan oleh anemia yang terjadi pada ibu hamil. Kegiatan ini difokuskan pada meningkatkan pengetahuan ibu hamil tentang pencegahan risiko BBLR yang disebabkan oleh anemia dan upaya pencegahan dari anemia melalui program AKSI NGEMIL SANG NAGA. Data yang kelompok kami ambil adalah data sekunder yang kami dapatkan dari Pelaporan Wilayah Setempat (PWS) GIZIKIA di Puskesmas Cempaka Putih. Dari data tersebut didapatkan hasil tingginya kejadian BBLR yang disebabkan oleh ibu hamil anemia Sehingga kami menentukan masalah ini menjadi masalah utama yang terjadi di wilayah Cempaka Putih stase komunitas ini. Metode yang digunakan dalam pengabdian masyarakat ini dengan menggunakan metode ceramah/penyuluhan, diskusi, dan peragaan, dengan sasaran ibu Hamil TM I-III. Hasil pengabdian masyarakat ini berjalan lancar dengan diikuti oleh 15 peserta Ibu Hamil, 1 kader dan 1 orang PKK Pokja IV. Kegiatan ini diawali dengan pemberian pretest pada 15 peserta ibu hamil, didapatkan hasil nilai pretest rata-rata 62 poin. Hal ini menunjukkan pengetahuan ibu tentang anemia masih kurang, maka dilakukan penyuluhan tentang anemia pada ibu hamil, dan demonstrasi upaya pencegahan anemia dengan konsumsi pisang ambon dan buah naga. Peserta tampak antusias mengikuti kegiatan ini, terdapat 6 orang ibu aktif bertanya. Evaluasi kegiatan dilakukan dengan dengan memberikan posttest kepada peserta. Didapatkan hasil rata-rata posttest 97 poin. Hal ini

menunjukkan adanya peningkatan pengetahuan yang baik dari ibu hamil tentang anemia sebagai upaya pencegahan terjadinya BBLR. Berdasarkan hasil kegiatan yang telah dilakukan terjadi peningkatan pengetahuan ibu hamil mengenai anemia sebagai upaya pencegahan terjadinya BBLR

Kata Kunci: *anemia, ibu hamil, pisang ambon, buah naga*

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INTRODUCTION

Low Birth Weight (LBW) is a critical public health indicator, as it is closely associated with increased risks of mortality, morbidity, and malnutrition in infants (Seid et al., 2022). While prematurity is often considered the primary cause of LBW, several other maternal and fetal factors contribute to its incidence (Liu et al., 2021; Rahmawati et al., 2024). Maternal factors include age (less than 20 years or more than 40 years), parity, and comorbidities such as anemia, preeclampsia, and chronic energy deficiency (CED) (Lutfia & Al Farizi, 2024). Fetal factors like umbilical cord complications, multiple pregnancies, and congenital abnormalities also play a significant role (Shaohua et al., 2022). Addressing these underlying causes is essential for reducing the prevalence of LBW and improving child health outcomes (Islam et al., 2024; Faqih et al., 2025).

Stunting in infants aged 0-11 months is another primary concern, with LBW, prematurity, and infectious diseases identified as significant contributing factors (Halli et al., 2021). Stunting reflects long-term nutritional deficiencies and poor health during early childhood, which can impact physical and cognitive development (Soliman et al., 2021; Wardani, 2024). Preventing LBW is therefore not only crucial for immediate infant survival but also for ensuring proper growth and development in the long term (Darmstadt et al., 2022). Public health strategies must focus on mitigating the root causes of LBW to break the cycle of stunting and its associated adverse effects (Firdaus & Maulana, 2025; Shofa et al., 2024).

Anemia during pregnancy is one of the leading contributors to LBW and poses serious risks to both mothers and infants (Khezri et al., 2025). According to data from the PWS GIZI KIA Cempaka Putih Health Center for September 2024, the incidence of LBW was recorded at 3.7%, exceeding the target of less than 3%. Among these cases, 58.8% were attributed to maternal anemia, highlighting its significant impact. Anemia results from insufficient red blood cell production, influenced by gender, lifestyle habits, and pregnancy stage (Deivita et al., 2020; Carolin et al., 2023). It compromises oxygen delivery to tissues, affecting maternal health and increasing the likelihood of complications during childbirth (Watkins et al., 2020).

The consequences of anemia extend beyond the mother, impacting fetal development and newborn health (Shi et al., 2022). Infants born to anemic mothers often lack adequate iron reserves, predisposing them to anemia later in life (James, 2021). This condition exacerbates the risk of

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developmental delays and infection susceptibility (Obeagu, 2025). Furthermore, anemia contributes to higher rates of maternal and infant morbidity and mortality, underscoring the need for effective interventions (Williams et al., 2023). Governments worldwide have prioritized addressing anemia through programs such as iron supplementation and dietary recommendations to improve pregnancy outcomes and reduce LBW rates (Mildon et al., 2023; Ferasinta et al., 2024).

Iron supplementation remains one of the most effective strategies for combating anemia during pregnancy (Skolmowska et al., 2021). Each iron tablet typically contains 200 mg of ferrous sulfate to meet physiological needs during gestation. Pregnant women are advised to consume at least 90 tablets throughout their pregnancy to maintain optimal hemoglobin levels (Elsharkawy et al., 2021). However, reliance solely on supplements may not suffice, as dietary practices play a complementary role in preventing anemia. Consuming foods rich in iron, folic acid, and vitamin C can enhance the absorption and utilization of nutrients, providing additional benefits for maternal and fetal health (Basrowi & Dilantika, 2021).

Non-pharmacological approaches, such as incorporating nutrient-dense fruits into diets, offer promising alternatives for managing anemia (Khare et al., 2022). For instance, Ambon bananas (Musa Paradisiaca var Sapientum Linn) are highly accessible and affordable, making them an ideal choice for pregnant women (Ruspita et al., 2022). These bananas contain essential nutrients such as iron, vitamin C, and B vitamins, which collectively support red blood cell formation and iron absorption. Regular consumption of Ambon bananas has been shown to increase hemoglobin levels effectively, demonstrating their potential as a natural remedy for anemia (Supriati & Kusumastuti, 2024).

Similarly, red dragon fruit (Hylocereus polyrhizus) is another fruit recognized for its high nutritional value and ability to combat anemia (Sofyana, 2022). Rich in iron, vitamin C, and riboflavin, dragon fruit aids red blood cell production and enhances iron metabolism. Its vitamin C content facilitates better iron absorption, while riboflavin supports cellular energy processes. Consuming dragon fruit, especially in processed forms like juice, accelerates nutrient absorption due to its rapid digestion, offering a practical solution for improving maternal nutrition (Qurniasih et al., 2024).

Combining traditional iron supplements with dietary interventions using fruits like Ambon bananas and dragon fruit could yield superior results in preventing and treating anemia during pregnancy (Widowati, 2023). Such integrated approaches address anemia's multifaceted nature, leveraging pharmacological and non-pharmacological methods. By promoting awareness and accessibility of these natural remedies, healthcare systems can empower pregnant women to adopt healthier lifestyles, ultimately reducing the burden of anemia-related complications (Choudhury et al., 2022).

Tackling the issue of LBW requires a comprehensive understanding of its underlying causes, particularly anemia during pregnancy. Effective prevention strategies involve a combination of iron supplementation, dietary modifications, and education about nutrient-rich foods (Obeagu, 2024).

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Encouraging the consumption of fruits such as Ambon bananas and dragon fruit can significantly improve maternal health outcomes, reduce the incidence of LBW, and contribute to healthier future generations (Muliawati et al., 2022). Further research and policy initiatives should prioritize scaling up these interventions to ensure equitable access and sustainability across diverse populations.

IMPLEMENTATION METHOD

Community service was conducted on December 28, 2024, from 09.30 to 12.30 at the Cempaka Putih Health Center. Materials and Tools/Instruments for Community Service are 50 grams of Ambon Banana, 100 grams of Dragon Fruit, 100 cc of Water, and all ingredients are given per serving in 1 bottle of 250 cc of juice. The tools/instruments used include a projector, laptop, banner, speaker, stationery/pen, logo/sticker, and pre- and posttest questions. This community service was carried out with the opening of pregnancy exercises to improve physical fitness and help maintain body stability, so that pregnant women are more enthusiastic before receiving counseling materials. Furthermore, counseling, Q&A discussions, and how to make Ambon banana and dragon fruit juice to overcome anemia in pregnant women were carried out with the jargon "AKSI NGEMIL SANG DRAGON," namely Education to Prevent Anemia in Pregnant Women with Bananas and Dragon Fruit. The counseling material provided at the Cempaka Putih District Health Center follows the priority problem, namely anemia in pregnant women.

The material provided includes an introduction to anemia in pregnant women, its characteristics, causative factors, and its negative impacts on the health of the mother and fetus. In addition, we educate pregnant women on how to prevent anemia through a healthy diet and by taking blood-boosting multivitamins. The following material discusses how to overcome anemia pharmacologically and non-pharmacologically, including complementary therapy in the form of Ambon bananas and dragon fruit, which are believed to be effective in increasing low HB levels.

To demonstrate the use of Ambon bananas and dragon fruit, we also teach how to make juice that can be consumed as part of a healthy diet to overcome anemia. For activity evaluation, we provide pretest questions before the counseling begins to measure the initial knowledge of pregnant women about anemia. After the counseling and activities are completed, we also provide a posttest to evaluate changes in knowledge obtained during the activity. This aims to determine the extent to which pregnant women can understand and apply the counseling material.

RESULT AND DISCUSSION

Community Service Activities include health counseling, held on Saturday, December 28, 2024, at 08.30-12.30 WIB. One cadre, 1 PKK Pokja IV person, and 15 pregnant women attended this activity. This activity began with giving a pretest to pregnant women; the average pretest score

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was 62 points. This shows that mothers' knowledge about anemia is still lacking, so counseling was carried out on anemia in pregnant women, and anemia prevention efforts were demonstrated by consuming Ambon bananas and dragon fruit. Participants seemed enthusiastic about participating in this activity; six mothers actively asked questions. Evaluation of the activity was carried out by giving a posttest to participants. The average posttest result was 97 points. This shows that there is an increase in good knowledge from pregnant women about anemia as an effort to prevent LBW. Based on the activities' results, there has been a significant increase in pregnant women's knowledge of anemia as an effort to prevent LBW, and feedback from participants gave a positive impression of this activity.

Counseling on Education to Prevent Anemia in Pregnant Women with Bananas and Dragon Fruit at the Cempaka Putih District Health Center in 2024

Anemia during pregnancy is a significant public health concern, as it not only affects maternal health but also compromises fetal development and increases the risk of adverse birth outcomes. It is diagnosed when hemoglobin (Hb) levels fall below 11 g/dL in the first and third trimesters, below 10.5 g/dL in the second trimester, and below 10 g/dL postpartum. This condition arises when the body lacks sufficient red blood cells to meet its physiological needs, which vary based on factors such as gender, age, smoking habits, and stage of pregnancy. The consequences of anemia extend beyond the mother, as infants born to anemic mothers often have depleted iron reserves, predisposing them to anemia early in life. This intergenerational impact underscores the urgency of addressing anemia during pregnancy (Davidson et al., 2023).

The detrimental effects of anemia on pregnant women are profound, contributing to increased maternal morbidity and mortality, higher rates of fetal morbidity and mortality, and an elevated risk of low birth weight (LBW). Several factors contribute to anemia in pregnancy, including inadequate birth spacing, insufficient iron supplementation, frequent consumption of coffee or tea, limited knowledge about nutrition, advanced maternal age, gestational age, and parity. These factors collectively exacerbate nutritional deficiencies, particularly iron deficiency, the leading cause of anemia. Additionally, poor dietary practices and socioeconomic challenges further compound the issue, making it imperative to implement community-based interventions that address these root causes effectively (Balcha et al., 2023; Novelia et al., 2022).

Iron is an essential nutrient required for the production of red blood cells, and its sources can be broadly categorized into animal-based and plant-based foods. Animal sources include eggs, milk, meat, fish, and liver, while plant-based sources encompass soybeans, green beans, tempeh, tofu, spinach, kale, and katuk leaves. Pregnant women require approximately 15 mg of iron daily to meet their physiological demands. While iron supplements remain a cornerstone of anemia prevention, dietary modifications play a complementary role in ensuring adequate iron intake. Fruits such as Ambon bananas, dates, dragon fruit, and tubers like sweet potatoes are rich in iron and other

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micronutrients, offering natural alternatives to support maternal health (Widowati, 2023; Sukmawati et al., 2024).

Among these fruits, dragon fruit stands out for its high nutritional value and potential to combat anemia. Rich in iron, folic acid, protein, and minerals like calcium and magnesium, dragon fruit is particularly beneficial for pregnant women. Its vitamin C content enhances iron absorption, aiding hemoglobin formation and improving blood circulation. Additionally, dragon fruit supports the immune system, promotes digestive health, reduces stress, and helps neutralize toxins in the blood. These properties make it an excellent dietary addition for pregnant women seeking to prevent or manage anemia. Moreover, consuming dragon fruit in juice accelerates nutrient absorption, providing quicker benefits than whole fruit consumption (Futriani et al., 2024).

Community-based interventions to educate pregnant women about the benefits of dragon fruit and other iron-rich foods are crucial for addressing anemia. Many women lack awareness of the nutritional value of locally available fruits and their role in preventing anemia. By disseminating knowledge through workshops, counseling sessions, and practical demonstrations, healthcare providers can empower pregnant women to adopt healthier dietary practices. For instance, teaching women how to prepare dragon fruit juice or incorporate Ambon bananas into their diets can significantly improve their hemoglobin levels and overall health. Such initiatives enhance maternal well-being and improve birth outcomes (Azhar et al., 2024; Febriani et al., 2024).

Integrating traditional food-based interventions with modern medical practices offers a holistic approach to managing anemia during pregnancy. While iron supplements remain indispensable, they should complement dietary strategies emphasizing nutrient-dense foods. This dual approach addresses the immediate need for iron supplementation and the long-term goal of fostering sustainable dietary habits. Furthermore, leveraging culturally appropriate and locally available resources ensures that interventions are cost-effective and accessible, particularly in underserved communities where anemia prevalence is highest (Morrison et al., 2023).

Addressing anemia during pregnancy requires a multifaceted strategy that combines education, dietary modifications, and medical interventions. Dragon fruit and other iron-rich fruits and vegetables are promising for combating anemia and improving maternal health outcomes (Rahmiati et al., 2023). Community engagement and empowerment are key to ensuring the success of such initiatives, as they foster ownership and sustainability. By prioritizing preventive measures and promoting healthy dietary practices, we can reduce the burden of anemia, enhance maternal and child health, and ultimately contribute to healthier communities.

Activity Documentation

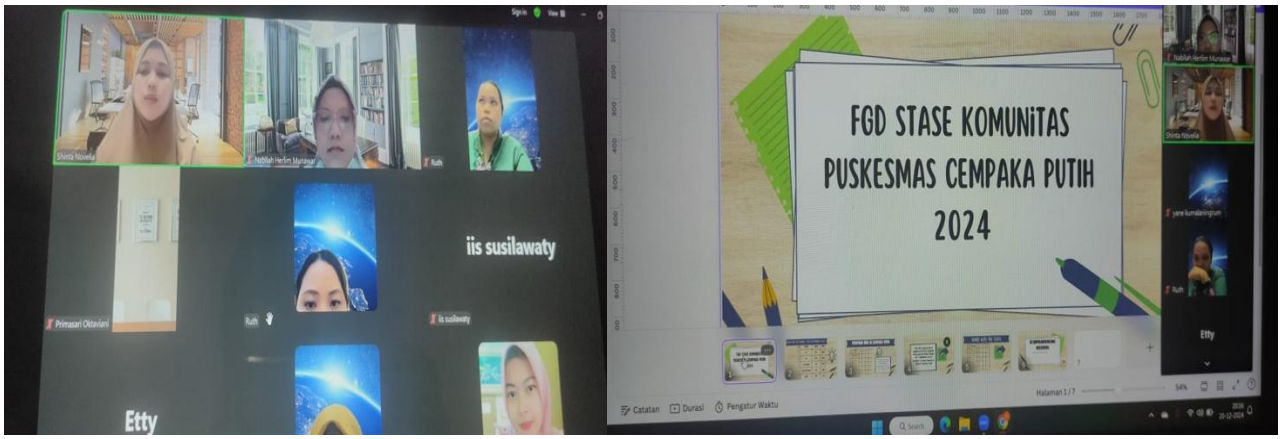

Figure 1. Attendance and FGD Documentation

Figure 2. Community Service Activities

Figure 3. The Dragon Snacking Action Sticker Logo

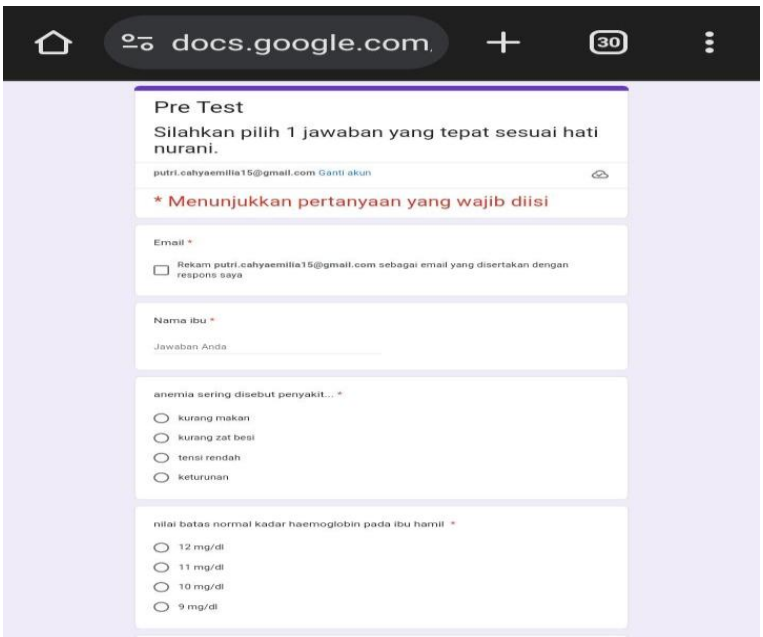

Figure 4. Pre-Post Test Sheet via Gform

CONCLUSION AND SUGGESTIONS

The community service activities at the Cempaka Putih Health Center increased pregnant women's understanding of anemia prevention. Before the counseling, most participants had limited knowledge about anemia, but after the counseling, there was a significant increase in their understanding of the causes, symptoms, prevention, and treatment. In addition, we also introduced complementary therapy in the form of Ambon bananas and red dragon fruit, which were processed into "AKSI NGEMIL SANG NAGA" Juice (Education on Preventing Anemia for Pregnant Women

with Bananas and Dragon Fruit) as a way to overcome anemia. This activity received a positive response from the participants, who were seen actively participating in the question and answer session, discussion, and direct practice. Pregnant women felt enthusiastic and motivated to apply what they had learned daily to overcome anemia. Overall, this program has proven relevant and beneficial for pregnant women at the Cempaka Putih District Health Center and has increased their knowledge about managing anemia naturally and effectively.

It is hoped that similar educational activities can continue to be carried out in various regions as a form of anemia prevention, especially for pregnant women. Involving Posyandu cadres actively can expand the reach of this program. Complementary therapy, namely "AKSI NGEMIL SANG DRAGON" (Education to Prevent Anemia for Pregnant Women with Bananas and Dragon Fruit), can be applied at the Cempaka Putih District Health Center and can also be applied to pregnant women who have attended to prevent anemia and knowledge of complementary therapy that has been known can be disseminated so that it can be helpful. Pregnant women can continue implementing a healthy lifestyle, such as consuming balanced, nutritious foods high in iron, exercising regularly during pregnancy, and managing stress. Assistance from family and local cadres can help them carry out these healthy habits consistently.

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