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Planting Family Medicinal Plants (TOGA) to Enhance the Immune System of the Lojejer Village Community

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Abstract

Purpose: This project aims to improve public health in Lojejer Village by promoting the cultivation of Family Medicinal Plants (TOGA). Despite rich natural resources, the community lacks knowledge and skills in TOGA cultivation and use.

Method: This project aims to improve public health in Lojejer Village by promoting the cultivation of Family Medicinal Plants (TOGA). Despite rich natural resources, the community lacks knowledge and skills in TOGA cultivation and use.

Practical Application: The initiative enhances self-sufficiency in healthcare, reduces reliance on pharmaceuticals, and supports environmental sustainability through TOGA cultivation.

Conclusion: The project successfully increased community awareness and proficiency in TOGA cultivation. As a result, it contributed to improved public health and environmental preservation. The initiative underscores the importance of utilizing local natural resources for sustainable health solutions and highlights the role of education in empowering communities.

Introduction

Public health is one of Indonesia's primary national goals, as stated in the Preamble of the 1945 Constitution (Handayani et al., 2024; Sarjito, 2024). Achieving sustainable national development in various aspects of life requires integrating public health into a comprehensive and well-directed development strategy. Article 28H of the 1945 Constitution affirms every citizen's right to a prosperous life, a healthy environment, and adequate healthcare services (Wijaya et al., 2021). Amid ongoing social and economic changes, the ability of communities to maintain their own health is becoming increasingly essential, particularly by utilizing local natural resources.

One such resource is Family Medicinal Plants (TOGA) plants known for their medicinal properties that can be cultivated in home gardens (Isrul et al., 2023; Zhahera et al., 2023). TOGA serves as an affordable and accessible source of traditional medicine and represents local wisdom passed down through generations (Sumardi et al., 2024; Tusshaleha et al., 2024). Commonly known as a "living pharmacy," TOGA involves planting medicinal herbs in home gardens for preventive or self-treatment purposes (Ismail et al., 2023). This is particularly crucial for families with limited access to formal healthcare facilities such as clinics or hospitals. By understanding the benefits of various medicinal plants, families can adopt TOGA as a primary, safe, and effective natural remedy. Additionally, TOGA contributes to household nutrition and can serve as a source of income for local communities (Sudalmi et al., 2021; Yusuf et al., 2022).

Lojejer Village, located in Wuluhan District, Jember Regency, has abundant natural potential for TOGA cultivation. However, the community's knowledge and skills in growing and utilizing these medicinal plants remain limited. Many residents are still unaware of TOGA's benefits in daily life, particularly in maintaining family health. Therefore, a sustainable education and empowerment program is necessary to enhance the community’s knowledge and skills in managing TOGA effectively.

The Collaborative Community Service Program (KKN) 03 is an initiative by university students aimed at empowering Lojejer Village through TOGA cultivation. This program seeks to raise awareness of TOGA as an accessible and cost-effective health solution. Additionally, it integrates local knowledge with modern agricultural methods to ensure sustainable TOGA development for long-term community benefits.

KKN students act as facilitators and change agents, encouraging the community to adopt TOGA for independent health management. This collaborative process is expected to foster village self-reliance in healthcare and strengthen community resilience against health challenges. Furthermore, the program serves as a platform for students to develop skills in community engagement, collaboration, and applying academic knowledge in real-world settings.

This study explores the impact of TOGA cultivation on the immunity of Lojejer Village residents, conducted in collaboration with KKN students. It also examines the students’ role in educating the community and evaluates how the TOGA planting initiative can serve as a sustainable model for other villages in Indonesia.

Method

The TOGA Cultivation Program was carried out on August 12, 2024, in Lojejer Village, Wuluhan District, Jember Regency, specifically in Sulakdoro Hamlet. This Community Service Program (KKN) aimed to benefit the residents of Lojejer Village by promoting the cultivation and utilization of medicinal plants. The program utilized locally available plants, including aloe vera, Brazilian spinach, mint leaves, turmeric, aromatic ginger, temu poh, cardamom, brotowali, basil, kuru kur, purple leaves, key ginger, temulawak, and grass jelly.

The program was implemented in three stages: preparation, execution, and socialization. The preparation stage, conducted on August 10-11, 2024, involved seeking

permission from the Village Head and Hamlet Head, surveying suitable land for TOGA cultivation, and preparing the land by clearing, loosening the soil, and applying basic fertilization. Additionally, the team selected and prepared seedlings suited to local soil and climate conditions.

The execution stage, held on August 12, 2024, focused on planting TOGA seedlings, installing nameplates for plant identification, and constructing protective fences around the TOGA garden. This stage ensured that the medicinal plants were properly cultivated and identified for long-term use.

Following this, the socialization stage, conducted on August 13, 2024, aimed to educate the community on the importance and benefits of TOGA. Residents were provided with information on how to process and utilize TOGA plants effectively for self-sufficient healthcare solutions.

Through these efforts, the TOGA cultivation program is expected to empower the community with the knowledge and skills to independently cultivate and utilize medicinal plants, promoting sustainable health practices and self-sufficiency in healthcare.

Result

The TOGA cultivation program was aimed at the residents of Lojejer Village, Wuluhan District, Jember Regency, with a particular focus on the local PKK (Family Welfare Movement) members. The implementation of this program by KKN (Community Service) students in Lojejer Village yielded positive results. The local community and PKK members enthusiastically participated, recognizing the benefits of TOGA for both health and environmental sustainability. With strong dedication from the community, PKK members, and KKN Collaborative students, the planting process proceeded successfully.

The program began with a planning stage, which was a crucial part of ensuring the success of the initiative. Proper planning determined the program's structure, execution, and achievement of objectives. The quality of this planning played a significant role in the overall success of TOGA cultivation in Lojejer Village.

The outcomes of this program included several key benefits:

1. Improved Public Health – The TOGA cultivation program enhanced community knowledge about the benefits of medicinal plants and improved their ability to cultivate them effectively. As a result, residents became more capable of utilizing TOGA as a natural health solution, contributing to better overall community health.
2. Environmental Preservation – The establishment of a TOGA center in Lojejer Village not only provided a reliable source of medicinal plants but also served as a model for environmental conservation. The planted medicinal herbs played a role in maintaining ecological balance and promoting sustainable environmental practices.
3. Dual Benefits for the Community – The TOGA cultivation initiative not only supported public health but also contributed to environmental sustainability. Lojejer Village has now become a successful example of how community-based initiatives can provide both health and environmental benefits, demonstrating the positive impact of collaborative efforts in rural development.

On August 11, 2024, KKN Collaborative students conducted a survey visit to Lojejer Village, specifically in Sulakdoro Hamlet, Wuluhan District, Jember Regency, to carry out an initial assessment for the Family Medicinal Plants (TOGA) cultivation program. Lojejer Village, known for its rich natural resources and strong community bonds, was selected as a potential location for TOGA development due to the community's need for easy access to medicinal plants that support family health.

Figure 1. TOGA Planting Site Survey

The survey activities began with mapping the proposed areas for TOGA cultivation. The KKN Collaborative team examined several potential locations, including privately owned land, vacant lots, and existing community gardens. Key criteria considered included soil fertility, sunlight exposure, and water accessibility to ensure optimal plant growth.

Following the survey, the KKN Collaborative team proceeded with the preparation of TOGA seedlings. This step was crucial in ensuring the success of the TOGA cultivation program, which aims to enhance community access to medicinal plants that can benefit family health.

Figure 2. Seedling Preparation for TOGA Cultivation

The preparation process began with the selection of medicinal plant varieties suitable for cultivation. The KKN Collaborative team identified plant species that matched the soil and climate conditions in Sulakdoro Hamlet, including aloe vera, Brazilian spinach, mint leaves, turmeric, aromatic ginger, temu pon, cardamom, brotowali, basil, kuru kur, purple leaves, key ginger, temulawak, and grass jelly. These seedlings were sourced from trusted suppliers to ensure high quality and optimal growth.

On August 12, 2024, the TOGA cultivation program in Sulakdoro Hamlet, Lojejer Village, Wuluhan District, Jember Regency, reached a significant milestone. This initiative was a collaboration between KKN Collaborative students and local PKK members, working together to implement and maintain the TOGA program for the well-being of the community.

Figure 3. TOGA Cultivation Implementation

The planting process began with land preparation, including land clearing, soil loosening, and fertilization. KKN Collaborative students and PKK members carefully planted the seedlings, ensuring the correct spacing and planting techniques for optimal growth.

Following the planting, regular maintenance became the primary focus. The team ensured consistent watering to maintain adequate soil moisture, particularly during the dry season. Additional fertilization was applied to provide essential nutrients for plant growth. Pest and disease control was also a crucial aspect, with the use of organic pesticides and integrated pest management techniques to protect plant health naturally.

After completing the TOGA cultivation process in Sulakdoro Hamlet, Lojejer Village, KKN Collaborative students and PKK members conducted a documentation activity to record progress and outcomes. This documentation aims to track each step of the program, assess its effectiveness, and plan for future improvements in the TOGA initiative.

Figure 4. Documentation of KKN Collaborative Students with PKK Members

Discussion

The cultivation of Family Medicinal Plants (TOGA) in Lojejer Village is a sustainable approach to improving public health by enhancing immune resilience. Medicinal plants like turmeric, ginger, temulawak, and aloe vera are rich in antioxidants and anti-inflammatory compounds, helping to boost immunity and prevent diseases.

Beyond health benefits, TOGA fosters community engagement and environmental sustainability (Dipuja et al., 2022; Pernantah et al., 2022). Involving PKK members and KKN Collaborative students promotes knowledge-sharing and encourages self-sufficiency in healthcare. Additionally, TOGA gardens enhance green spaces, improving air quality and living conditions.

However, challenges remain, such as limited awareness and technical skills in TOGA cultivation. To address this, education and training on organic farming and herbal medicine preparation are essential. In conclusion, the TOGA program in Lojejer Village offers a

practical and sustainable solution for strengthening community health. With continued support from educational institutions and local authorities, TOGA can become a model for other communities, promoting self-reliance and environmental preservation in healthcare.

Conclusion

The planting and utilization of Family Medicinal Plants (TOGA) by KKN students in Lojejer Village, Wuluhan District, Jember Regency has yielded positive results, significantly contributing to public health improvement and environmental conservation. This program successfully raised awareness and community skills in utilizing medicinal plants as an accessible and cost-effective alternative treatment. Besides enhancing biodiversity, TOGA also has the potential to develop into small-scale businesses, benefiting the community economically through processing and marketing medicinal plant products. The program's success demonstrates that community-based initiatives can create a dual impact—improving public health while promoting environmental sustainability. The establishment of a TOGA center in Lojejer serves as a model for sustainable social transformation, showcasing how community-student collaboration can foster local institutions that support health and well-being.

Further support from local governments and relevant stakeholders is needed to strengthen the TOGA program, including advanced training, infrastructure support, and market access for processed TOGA products. The local community is encouraged to maximize TOGA utilization, expand cultivation using available land, and diversify plant varieties for increased production. Continuous education and empowerment programs are essential to sustaining knowledge and skills in TOGA management. The program’s success can be replicated in other villages, with adaptations to local conditions, reinforcing collaborations between educational institutions, the government, and communities to expand its positive impact.

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