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Utilization of Local Plant: Beluntas Leaves (Pluchea indica Leaves) to Enhance Breast Milk Production

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Abstract

Background of study: Breast milk plays a crucial role in infant growth and maternal health; however, some mothers experience insufficient production due to physiological, psychological, and nutritional factors. A promising alternative to address this issue is the use of local plants with galactagogue properties, which stimulate milk production.

Methods: This community service activity aimed to support breastfeeding mothers through health education with a counseling method on the importance of breastfeeding, an explanation of the benefits of beluntas leaves (Pluchea indica), and a demonstration of their preparation by boiling.

Result: The results of this activity show that the majority of the 84 respondents (91.67%) felt the benefits of the counseling and demonstration on processing beluntas leaves. Evaluation results indicated that participants showed improved understanding of breastfeeding benefits and expressed interest in trying beluntas consumption at home as a natural method to increase milk supply. The integration of health education, scientific explanation, and practical demonstration effectively enhanced both knowledge and motivation among mothers.

Conclusion: Therefore, the utilization of beluntas leaves has the potential to serve as a simple, applicable, and community-based intervention to promote increased breast milk production.

A. Introduction

The postpartum period is a crucial period for mothers after giving birth, during which the body undergoes physical and hormonal recovery. One of the main challenges during this period is ensuring the smooth production of breast milk. Exclusive breastfeeding is crucial for the growth and development of infants, as it contains complete nutrition and antibodies that support the immune system (World Health Organization, 2021) . However, many mothers face challenges in producing sufficient breast milk due to physiological, psychological, and nutritional factors (Kusmiyati, Y., & Purnama, 2020) . This condition can result in inadequate infant nutrition, potentially hindering growth and development (Rahmawati, A., Suryani, E., & Pratiwi, 2021) .

Efforts to support breast milk production have been made through medical and non-medical interventions. Medical interventions are possible but relatively expensive. One non-medical approach is the use of local plants containing galactagogue compounds. Galactagogues are natural substances that stimulate breast milk secretion (Patel, S., Sharma, V., & Chauhan, 2020).

Indonesian society has a tradition of utilizing the potential of nature. One plant that contains high levels of galactogogue is the beluntas leaf. Indonesia is rich in traditional medicinal plants that have long been used in everyday life. One such plant is the beluntas leaf (Pluchea Indica), a shrub known for its various health benefits. In addition to being used as a traditional medicine to treat body odor, digestive disorders, and inflammation, beluntas leaves are also believed to act as a *breast milk booster* . The active compounds they contain, such as flavonoids and antioxidants, are believed to be able to stimulate breast

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milk production naturally (Nugraheni, D., Suryati, E., & Yuliani, 2019) (Lumbanraja, P., Siregar, M., & Lubis, 2018).

Several studies and public health practices have shown that consuming herbal medicine or boiled beluntas leaves can help increase breast milk production in postpartum mothers. Education about the use of this herbal plant at integrated health posts (Posyandu) and community service activities has proven effective in increasing postpartum mothers' knowledge while providing accessible, natural alternatives (Darmawan, R., Hidayati, S., & Pratama, 2021) (Syarif, RA, Anggorowati, N., Yuniyanti, MM, Adyaksa, DNM, & Wahyuningsih, 2023).

Thus, the use of beluntas leaves to increase breast milk production not only supports maternal and infant health but also strengthens local wisdom in the use of traditional medicinal plants. This aligns with the objective of this community service project entitled "Utilization of Beluntas Leaves (Pluchea indica) to Increase Breast Milk Production through Health Education for Breastfeeding Mothers." The scientific novelty of this article lies in the exploration of beluntas leaves as an alternative intervention rarely practiced in the community. to empower breastfeeding mothers through health education based on local potential. This activity is expected to serve as a simple, affordable, and easy-to-implement intervention to support increased breast milk production in breastfeeding mothers .

B. Method

The method of implementing this community service activity is carried out through a participatory education approach which consists of three main stages, namely preparation, implementation, and evaluation.

1. Preparation

The preparation phase began with the implementation team obtaining official permits through the Padang City Investment and One-Stop Integrated Services Agency, and obtaining approval from the Koto Tangah Sub-district Head and the Batipuh Panjang Village Head. Following the administrative process, coordination was conducted with local midwives to determine the selected integrated health post (Posyandu) location and confirm participant data. The team also developed educational materials in the form of short videos and PowerPoint presentations (PPT) discussing exclusive breastfeeding, factors affecting breast milk production, and the benefits of beluntas leaves (Pluchea indica). Additionally, fresh beluntas leaves and basic boiling equipment were prepared for use during the practical demonstration session. Pre- and post-test instruments were developed to assess participant understanding.

Figure 1 Presentation Title Slide " Utilization of Local Plants (Beluntas Leaves) for "Increasing Breast Milk Production" at the Education Session at the Batipuh Panjang Integrated Health Post

Figure 2. Title Slide of the Short Video "Utilization of Local Plants (Beluntas Leaves) for "Increasing Breast Milk Production" at the Education Session at the Batipuh Panjang Integrated Health Post

Figure 3. Boiling equipment to support the demonstration of processing beluntas leaves **.**

2. Implementation

This community service program was conducted over two days at two integrated health service posts (Posyandu) locations in Batipuh Panjang on August 13-14, 2026, with the participation of 84 breastfeeding mothers. The activity began with a pre-test to assess the participants' initial abilities. The first phase included an animated video screening and health education sessions, which included health education emphasizing the importance of exclusive breastfeeding, factors affecting breast milk production, and common challenges faced by mothers. These sessions were delivered through interactive lectures supported by PowerPoint slides and educational videos. The second phase focused on introducing beluntas leaves (Pluchea indica) as a local plant with potential galactagogue properties. Participants were given an explanation of the plant's characteristics, bioactive components, and its potential benefits in supporting lactation. The third phase was a practical demonstration in which facilitators prepared beluntas tea by boiling fresh leaves. Participants observed the preparation process, tasted the tea, and engaged in discussions regarding proper storage, dosage, and frequency of consumption.

Figure 4. Participants watch a video about the importance of breast milk and an explanation of beluntas leaves **.** at the Batipuh Panjang Integrated Health Post.

Figure 5. The presenter delivered educational material on the importance of exclusive breastfeeding at the Batipuh Panjang Integrated Health Post (Posyandu) **.**

Figure 6. Participants were given scientific information about beluntas leaves (Pluchea indica) as a local galactagogue **.**

Figure 7 . Demonstration of boiling beluntas leaves to make herbal tea, facilitated by the community service team.

Evaluation

Evaluation was conducted through open discussions and a post-test to assess participants' understanding after the intervention. Observations were used to record participants' level of engagement during the activity, including their participation in discussions and responses to the material presented. The open discussions, facilitated by the implementation team in conjunction with local midwives, aimed to explore participants' understanding and perceptions of exclusive breastfeeding and the use of beluntas leaves in greater depth. Additionally, questionnaires were distributed to assess participants' knowledge of exclusive breastfeeding, their perceptions of beluntas leaves, and their willingness to try beluntas tea at home.

Figure 8 . An open discussion session facilitated by the implementation team and local midwives to evaluate participants' understanding and perceptions.

Figure 9. Participants completed a questionnaire as part of an evaluation of their understanding and response to educational materials and practical use of beluntas leaf harvesting to support breast milk production.

C. Results and Discussion

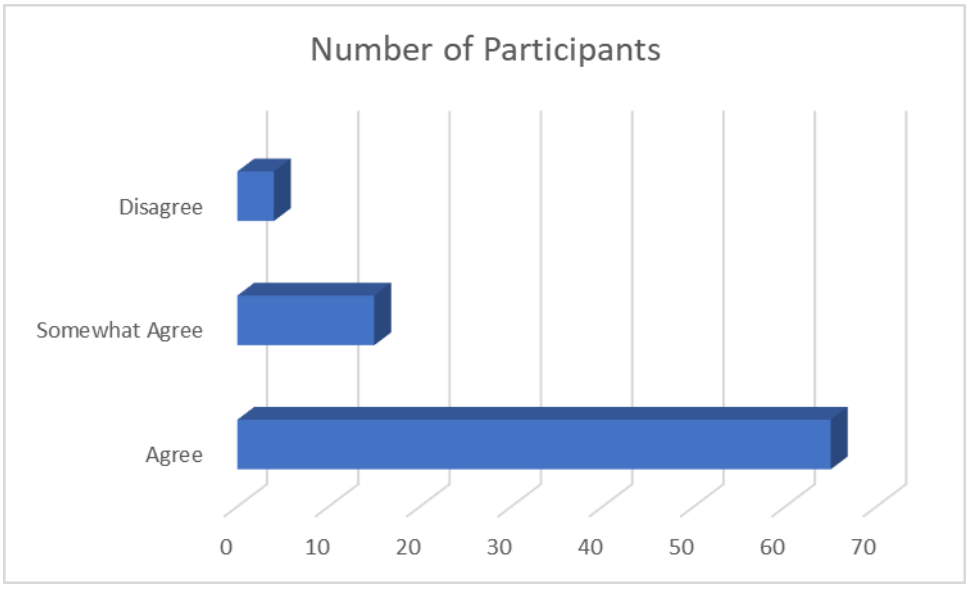

Figure 9 . Distribution of participants' level of agreement regarding exclusive breastfeeding .

The results showed that the majority of participants (65 mothers) agreed with exclusive breastfeeding until the age of 2 years, while 15 mothers somewhat agreed, and 4 mothers disagreed. This indicates that awareness of the importance of exclusive breastfeeding is relatively high among participants. This finding is consistent with WHO recommendations (World Health Organization, 2021) and is in line with previous research emphasizing the benefits of exclusive breastfeeding in improving infant health outcomes

(Rahmawati, A., Suryani, E., & Pratiwi, 2021) . However, the small proportion of mothers who disagreed indicates that misunderstandings and barriers to breastfeeding persist, necessitating continued public education.

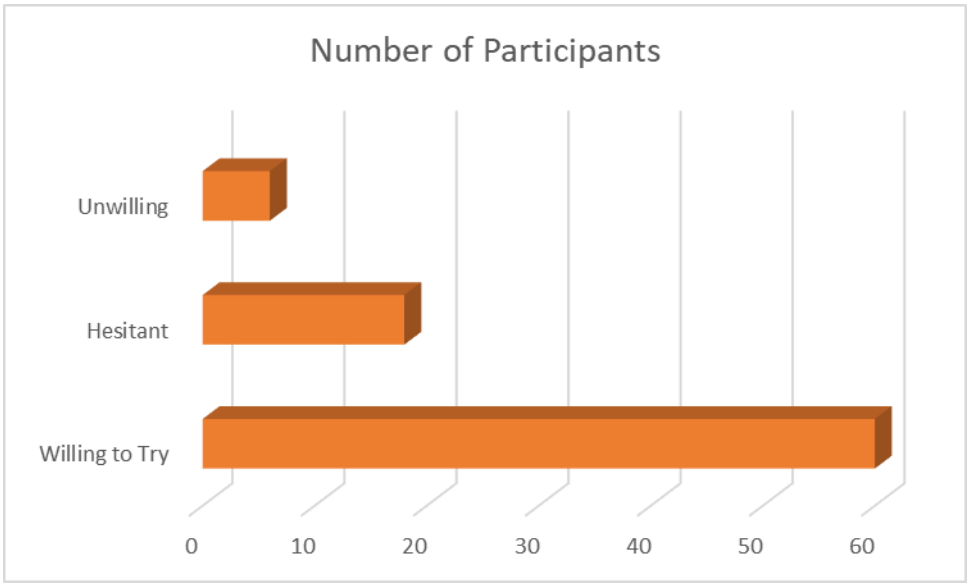

Figure 10. Participants' readiness to try beluntas leaves as a supplement to support breast milk production

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Regarding the introduction of Pluchea indica leaves as a potential galactagogue, 60 participants expressed willingness to try, 18 participants were undecided, and 6 participants expressed unwillingness. This positive response indicates that most mothers are open to locally available alternative solutions to support breast milk production. The observed hesitation may be due to limited prior knowledge or concerns regarding its safety and efficacy, which is consistent with previous studies that have noted cultural and informational barriers to the adoption of herbal galactagogues (McBride, C., Weber, S., & Chan, 2021) (Tan, K.L., Thia, Y.C., & Ng, 2022).

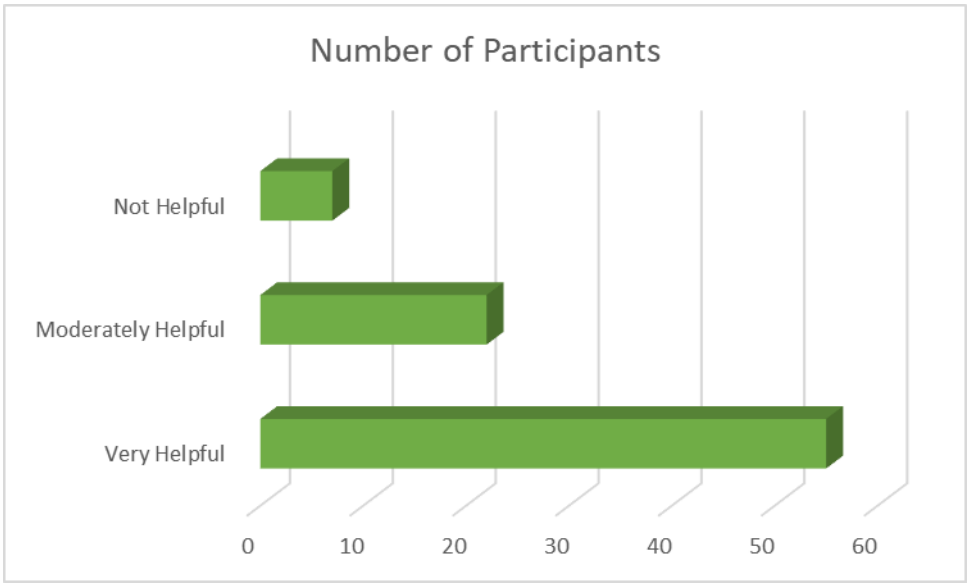

Figure 11. Participants' perceptions of the benefits of counseling and demonstration methods.

When asked about the perceived benefits of the counseling and demonstration methods, 55 participants reported the program as very helpful, 22 as somewhat helpful, and only 7 as not helpful. These results highlight the effectiveness of combining health education with practical demonstrations to increase

participant engagement and knowledge retention. Previous community service studies in Indonesia also showed that interactive methods, such as demonstrations and discussions, increased maternal knowledge and willingness to adopt healthier breastfeeding practices (Susanti, D., Wahyuni, S., & Fitri, 2020) (Hidayah, N., Nuraini, L., & Dewi, 2023).

The findings from this activity address the main research problem by demonstrating that integrating local knowledge with structured health education can increase maternal awareness and motivation. Program findings were obtained through direct observation, discussion, and participant feedback .

Efforts to increase exclusive breastfeeding coverage remain a challenge in maternal and child health services. One common complaint among postpartum mothers is the perception of insufficient breast milk production in the early postpartum days. This condition can be influenced by hormonal and psychological factors, nutritional status, and lack of breastfeeding stimulation. Therefore, safe, accessible, and locally-based promotive and preventive interventions are needed.

One of the herbs traditionally used by Indonesians to stimulate breast milk production is Pluchea indica, also known as beluntas leaves. This plant grows abundantly in tropical regions and has long been used as a salad and traditional medicine.

Pharmacologically, beluntas leaves contain various active compounds such as flavonoids, alkaloids, tannins, essential oils, and phytosterols. The flavonoid and phytosterol content is thought to play a role in increasing the secretion of the hormones prolactin and oxytocin, which play a vital role in lactogenesis and breast milk ejection. Prolactin functions in the synthesis and production of breast milk in the breast alveoli, while oxytocin plays a role in the let-down reflex. With increased hormonal stimulation, breast milk production and release can be more optimal (Lumbanraja, P., Siregar, M., & Lubis, 2018).

Several experimental studies also support the galactagogue potential of beluntas leaves. A study published in *the Journal of Herbmed Pharmacology* showed that ethanol extract of Pluchea indica leaves had lactogenic activity in lactating rats, indicated by increased weight gain in the offspring and elevated serum prolactin levels. These results strengthen the scientific basis for the use of beluntas leaves in traditional practices (Lumbanraja, P., Siregar, M., & Lubis, 2018).

In the context of community service, the use of beluntas leaves has several advantages, including: Easy to obtain and grows abundantly in home gardens, low cost so it is affordable for the community, relatively safe when consumed in boiled form or as a side dish in reasonable amounts, supporting a promotional approach based on local wisdom.

During community service activities, postpartum mothers were educated about the benefits of beluntas leaves, how to properly prepare them (e.g., boil them for 10–15 minutes or eat them as a fresh, washed salad), and the importance of maintaining lactation management principles, such as early breastfeeding initiation, on-demand breastfeeding, and proper attachment. Herbal interventions do not replace basic lactation principles, but serve as complementary therapies.

However, safety considerations should still be considered when using beluntas leaves. There is no strong long-term safety data for excessive consumption. Therefore, education regarding appropriate dosages is necessary, as well as advice to consult a healthcare professional if certain medical conditions arise.

Overall, the use of beluntas leaves as a natural galactagogue shows promising potential in supporting increased breast milk production. Integrating an evidence-based herbal approach with lactation management education could be an effective strategy in increasing the success of exclusive breastfeeding in the community.

D. Conclusion

Most university mothers were highly aware of the importance of exclusive breastfeeding until the age of 2 years, in accordance with WHO recommendations. Most mothers also expressed openness to the use of beluntas leaves (Pluchea indica) as a supplement for breast milk production, although a small number were hesitant or reluctant, suggesting the need for further education on the safety and effectiveness of this herb. The counseling method, which combined health education with practical demonstrations, proved effective in increasing mothers' knowledge and motivation to breastfeed. This program made a scientific contribution by introducing beluntas leaves as a potential local galactagogue, expanding on previous studies that focused on other plants such as katuk (savory gourd) and torbuild (torbuild). However,

limitations of the program included the short duration of the intervention and the subjective perception of data, suggesting further research to evaluate the long-term use and actual effects of beluntas on breast milk production.

E. Acknowledgment

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F. Author Contribution Statement

MB was responsible for preparing the proposal, obtaining official permits, coordinating the community service team, establishing relationships between programs and sectors, managing activity implementation, compiling reports, drafting scripts, developing video animation scenarios, and handling publications. IP contributed by preparing tools and materials with leaders, conducting community service interventions, assisting in report preparation, and designing video animations. Both authors have read and approved the final version of the manuscript.

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