



INTRODUCTION TO RED GINGER PROCESSING AS A HEALTH DRINK FOR WOMEN WITH REPRODUCTIVE HEALTH DISORDERS IN PETERONGAN JOMBANG

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ABSTRACT

This community service program aimed to improve knowledge and practical skills among women regarding the processing of red ginger (*Zingiber officinale* var. *rubrum*) as a health beverage to support reproductive health and immune function. The activity was conducted in Jabon Village, Jombang Regency, involving 25 participants. The intervention consisted of health education, interactive discussion, and a hands-on demonstration session. Program evaluation was carried out using a pre-test and post-test questionnaire to assess participants' knowledge. The results showed an increase in the mean knowledge score from 62.4 (pre-test) to 84.7 (post-test), indicating a significant improvement in participants' understanding of the benefits and processing methods of red ginger. Participants were also able to independently demonstrate the preparation of red ginger beverages. In addition, the program enhanced participants' awareness of the economic potential of herbal products as home-based business opportunities. In conclusion, the combination of education and practical demonstration is effective in improving community knowledge and skills. Further follow-up programs are recommended to ensure sustainability and long-term impact.

Keywords: Red Ginger, Reproductive Health, Community Empowerment, Herbal Beverage, Health Education.

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INTRODUCTION

Universities are obligated to implement the Tri Dharma (Three Pillars of Community Service), one of which is community service. Community service activities are a form of scientific implementation aimed at improving community welfare through education and empowerment. According to the activity report, the target of this service was housewives in Jabon Village, Jombang, particularly those experiencing reproductive health problems, including HIV/AIDS.

Reproductive health disorders in women remain a public health issue. This condition impacts not only physical health but also psychological and social health. Comprehensive promotive and preventive efforts need to be implemented, including through the use of readily accessible herbal plants.

Red ginger (*Zingiber officinale* var. *rubrum*) is an herbal plant containing gingerol and shogaol, which have anti-inflammatory, antioxidant, and immunomodulatory properties. Using red ginger as a health drink can be a non-pharmacological alternative to maintain immunity and help maintain reproductive health.

Beyond health aspects, red ginger processing also has economic potential. Empowering women through herbal processing skills can increase independence and open up home-based business opportunities. Therefore, this activity focuses not only on health aspects but also on increasing the community's economic capacity.

Although several studies have demonstrated the anti-inflammatory, antioxidant, and immunomodulatory properties of red ginger, its specific

application in community-based reproductive health promotion remains underexplored. Particularly in vulnerable populations, such as women with reproductive health disorders including HIV/AIDS, strengthening immune function through complementary approaches may contribute to improved quality of life. Therefore, this program seeks to bridge the gap between scientific evidence and community practice by translating herbal knowledge into practical skills that are applicable at the household level.

OBJECTIVES

General Purpose

The general purpose of this community service program is to enhance the knowledge and practical skills of women, particularly those experiencing reproductive health disorders, in utilizing red ginger (*Zingiber officinale* var. *rubrum*) as a functional health beverage. This program aims to promote community awareness regarding the benefits of herbal-based interventions for improving immune function and supporting reproductive health, while also fostering economic empowerment through the development of home-based herbal product initiatives.

Special Purpose

The specific purposes of this community service activity are to:

1. Improve participants' knowledge regarding the health benefits of red ginger for immune and reproductive health.
2. Enhance participants' understanding of the bioactive compounds contained in red ginger, such as gingerol and shogaol.
3. Develop participants' practical skills in processing red ginger into a

consumable health beverage through hands-on demonstration.

4. Encourage active participation through interactive discussion to strengthen learning outcomes.
5. Increase participants' awareness of the economic potential of red ginger as a home-based herbal product that can support family income.

PLAN OF ACTION

Strategy Plan

The strategy plan for this community service program focuses on strengthening both its academic quality and long-term community impact. First, in terms of program implementation, the educational component should be enhanced by incorporating more evidence-based information, including appropriate dosage, safety considerations, and practical standard operating procedures (SOPs) for processing red ginger. Developing a structured training module will ensure consistency and replicability in future programs.

From a research perspective, the evaluation method needs to be improved by applying inferential statistical analysis, such as a paired t-test or Wilcoxon test, to validate the significance of the increase in knowledge scores from pre-test to post-test (62.4 to 84.7). In addition, the evaluation indicators should be expanded beyond knowledge to include participants' practical skills and behavioral changes, supported by follow-up assessments conducted one to three months after the intervention.

To strengthen community empowerment, the program should facilitate the formation of a women's herbal group that can continue red ginger production collectively. This can be supported by additional training in packaging, labeling, and basic marketing strategies to transform the activity into a

small-scale home industry. Collaboration with local stakeholders, such as health centers, village authorities, and small business agencies, will further support sustainability.

Ensuring program continuity is also essential. A train-the-trainer approach can be adopted by selecting several active participants to become local cadres who will continue disseminating knowledge within the community. Regular mentoring and monitoring should be conducted to maintain engagement and track progress. At the same time, attention should be given to the availability of raw materials to support ongoing production.

From an academic standpoint, the manuscript can be strengthened by emphasizing its novelty in linking herbal-based interventions with reproductive health in a community setting, while also expanding the discussion to include comparisons with previous studies and clearly stating study limitations. Finally, potential risks, including misconceptions about red ginger as a curative treatment, participant drop-out, and challenges in economic implementation, should be anticipated and managed through clear communication, incentives, and gradual business development approaches.

Implementation

The implementation of this community service program was carried out in a structured and participatory manner to ensure both effectiveness and community engagement. The activity began with a preparation phase, which included coordination with local stakeholders, identification of participants, and preparation of educational materials and tools for the demonstration. Participants were recruited based on their willingness to attend, with a focus on women experiencing reproductive health concerns.

Prior to the intervention, a pre-test was administered to assess baseline knowledge regarding the benefits and processing of red ginger.

The core implementation phase consisted of three integrated components: health education, interactive discussion, and hands-on demonstration. The educational session provided information on the nutritional content of red ginger, its bioactive compounds such as gingerol and shogaol, and its potential role as a complementary approach to support immune and reproductive health. This was followed by an interactive discussion session, allowing participants to ask questions, share experiences, and clarify misconceptions. The final component was a live demonstration of red ginger beverage preparation, during which participants observed and practiced the step-by-step process, ensuring skill acquisition through direct involvement.

Following the intervention, a post-test was conducted to evaluate changes in participants' knowledge. The results indicated a notable improvement in understanding, reflecting the effectiveness of combining educational and practical approaches. In addition to knowledge gain, participants demonstrated the ability to independently prepare the red ginger beverage, indicating successful skill transfer.

To support sustainability, the implementation also included initial guidance on simple packaging and the potential economic value of red ginger products as a home-based business. Participants were encouraged to apply the knowledge in their daily lives and explore small-scale production opportunities. Overall, the implementation process emphasized active participation, practical

learning, and community empowerment, ensuring that the program delivered both immediate educational benefits and longer-term potential impact.

Setting

The setting of this community service program was Jabon Village, located in Jombang Regency, East Java, Indonesia. This area was selected based on its relevance to the program's target population, particularly housewives experiencing reproductive health concerns and limited access to structured health education related to complementary therapies. The activity was conducted on April 7, 2025, in a community-accessible venue that allowed for interactive learning and practical demonstrations.

The environment was informal yet conducive to learning, enabling active participation and open communication among the 25 participants. Most participants were housewives with secondary education backgrounds, which influenced the approach used in delivering the material—emphasizing simple language, visual explanation, and hands-on practice. The setting also supported group interaction, making it easier to facilitate discussions and encourage peer learning.

In addition, the local context of Jabon Village, which has access to herbal plants such as red ginger and a strong culture of community gatherings, provided a supportive foundation for implementing this program. This setting not only facilitated the delivery of health education but also enhanced the feasibility of applying the acquired skills in daily life, including the potential development of small-scale, home-based herbal production. Overall, the chosen setting played a crucial

role in ensuring the relevance, accessibility, and effectiveness of the intervention.

Target

The target of this community service program was women of reproductive age, particularly housewives residing in Jabon Village, Jombang Regency, who experience or are at risk of reproductive health disorders. This includes women with limited access to health information as well as those requiring additional support in maintaining their immune and reproductive health, including individuals affected by conditions such as HIV/AIDS as noted in the local context.

A total of 25 participants were involved in the program, selected through a convenience sampling approach based on their willingness and availability to attend the activity. The majority of participants had a secondary level of education, which informed the design of the intervention to be simple, practical, and easy to understand.

The program specifically targeted improving participants' knowledge and skills in utilizing red ginger as a complementary health beverage, while also encouraging behavioral changes toward healthier lifestyles. In addition, the target extended beyond health aspects to include economic empowerment, aiming to equip participants with basic skills that could be developed into small-scale, home-based business opportunities.

RESULTS AND DISCUSSION

The community service activity was successfully implemented with the participation of 25 women from Jabon Village. The majority of participants were housewives (72%), with an average age of

34.6 years. Most participants had a secondary education level (60%).

The results of the knowledge assessment showed a clear improvement following the intervention. The mean pre-test score was 62.4, which increased to 84.7 in the post-test. This indicates an improvement of 22.3 points, suggesting that the educational and demonstration approach was effective in enhancing participants' understanding. Participants were able to correctly identify the health benefits of red ginger, its bioactive compounds, and the steps involved in preparing the beverage.

In terms of health benefits, the material presented emphasized that red ginger contains gingerol and shogaol, which have anti-inflammatory and antioxidant properties, and have the potential to boost immunity. In the context of women with reproductive health disorders, including housewives infected with HIV/AIDS, as mentioned in the activity report, strengthening the immune system is crucial for maintaining quality of life. Although red ginger is not a curative therapy, its use as a non-pharmacological complementary therapy can be part of a promotive and preventative approach to reproductive health. Thus, this activity is not only informative but also supports healthy lifestyles based on local resources.

In addition to health aspects, the economic empowerment dimension is also an important outcome of this activity. The activity budget breakdown shows that Rp500,000 was allocated for the main ingredient, ginger drink, out of a total cost of Rp1,150,000 for materials and equipment. This indicates that production costs are relatively affordable and feasible for household replication. Participants gained insight into the benefits of red

ginger processing for family health and also have potential market value as a herbal drink. This aligns with the concept of village community empowerment, which emphasizes skills development, independence, and local entrepreneurial potential.

From a managerial perspective, all planned output targets in the proposal were achieved, including increased participant understanding, improved activity quality, partner satisfaction, and publication of the activity. Although minor technical challenges occurred during implementation, these did not impact the substance of the activity. Media, tools, and the committee's role proceeded as planned. The planned follow-up evaluation also serves as an indicator of the program's commitment to sustainability, ensuring that the activity does not stop at the outreach stage but has the potential to be developed into community-based herbal business mentoring.

Overall, the results of the activity demonstrate that the educational approach and demonstration of red ginger processing are effective in improving health literacy and practical skills in the community. This program represents a concrete implementation of the Tri Dharma of Higher Education in terms of community service, integrating the dimensions of reproductive health and economic empowerment. For further development, quantitative evaluation through pre- and post-tests is needed to statistically measure the impact of increased knowledge, as well as ongoing mentoring to ensure the program's continued benefits at the community level.

Despite the promising findings, it is important to note that red ginger should be considered as a complementary approach

rather than a primary treatment, particularly for individuals with complex conditions such as HIV/AIDS. While its bioactive compounds, such as gingerol and shogaol, have demonstrated immunomodulatory effects, further clinical studies are required to establish its direct impact on reproductive health outcomes. Therefore, the integration of herbal interventions should be accompanied by appropriate medical care and health monitoring.

CONCLUSION

This community service program demonstrated that a combination of health education and practical demonstration effectively improved participants' knowledge and skills in processing red ginger as a health beverage. The intervention not only contributed to increased health literacy, particularly in relation to immune and reproductive health, but also introduced potential economic opportunities through home-based herbal production. However, future programs should incorporate more rigorous evaluation methods and long-term follow-up to ensure sustainability and measurable impact. Strengthening collaboration with local health services is also recommended to optimize the integration of complementary and conventional health approaches..

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