

Article

Improving health literacy through education on the use of rambusa leaf (*Passiflora foetida*) herbal medicine for hypertension management among older adults

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Abstract

Background: Hypertension is one of the most common chronic diseases among older adults and remains a significant public health concern. In Kebonsari Village, limited community awareness of the medicinal potential of locally available rambusa leaves (*Passiflora foetida*), which contain flavonoids with antihypertensive properties, has hindered their utilization as a complementary herbal remedy.

Identification problems: A community assessment identified inadequate knowledge of hypertension management and limited practical skills among older adults in utilizing rambusa leaves as a safe and accessible herbal therapy to support blood pressure control.

Methods: This community service programme involved 35 older adults in Kebonsari Village. The programme was implemented through baseline blood pressure screening, health education on hypertension and the benefits of *Passiflora foetida*, practical training on preparing herbal decoctions, and programme evaluation using participant observations and a satisfaction survey. Programme outcomes were assessed descriptively based on participants' health awareness, practical skills, and satisfaction.

Results: Baseline screening revealed that 57% of participants had systolic blood pressure exceeding 180 mmHg, indicating the need for community-based intervention. Following the programme, participants demonstrated improved understanding of hypertension management and actively participated in the practical sessions. Overall satisfaction reached 88.6%, with 97.1% of participants reporting that they were very satisfied with the hands-on training.

Conclusion: The community service programme effectively improved participants' knowledge and practical skills in utilizing *Passiflora foetida* as a complementary herbal therapy for hypertension management. The programme also demonstrated the potential of community-based health education to promote self-care practices and support healthy ageing among older adults.

Keywords: community service, complementary therapy, herbal medicine; hypertension; *passiflora foetida*

1. Introduction

Hypertension is a non-communicable disease with a high prevalence, particularly among the elderly population. According to the 2018 Basic Health Research (Riskesdas), the prevalence of hypertension in the Indonesian population aged 18 and older reached 34.1%, with a higher prevalence observed in the elderly group (Sirait & Ronoatmodjo, 2024). Hypertension often presents with no distinct symptoms, leading many sufferers to remain unaware of their condition and fail to receive appropriate treatment. This condition is further exacerbated by limited access to quality healthcare services in certain regions, as well as a high dependence on chemical medications that can cause adverse side effects with long-term consumption. Consequently, community-based promotive and preventive approaches have become crucial in enhancing the awareness and independence of the elderly in managing their blood pressure safely and naturally.



One potential solution is the utilization of wild plants available in the surrounding environment. Rambusa leaves (*Passiflora foetida*) represent a herbal plant with antihypertensive potential. Several studies indicate that rambusa leaf extract contains active compounds such as flavonoids, saponins, and alkaloids, which exhibit vasodilator, diuretic, and antioxidant effects all playing a crucial role in lowering blood pressure (Melo Filho et al., 2018).

However, public knowledge, particularly among the elderly, regarding the utilization of rambusa leaves as a herbal medicine remains low. This plant is often dismissed as a mere weed, despite possessing substantial therapeutic benefits. With proper education and training, older adults can be empowered to identify, process, and utilize rambusa leaves as part of managing mild to moderate hypertension, without carelessly abandoning conventional medical treatments. Empowering healthy elderly individuals through guidance on herbal medicine usage is expected to raise awareness of the importance of early blood pressure control, provide an accessible and economical natural treatment alternative, and strengthen community participation in maintaining self-care through the utilization of local plants.

Kebonsari Village, located in the Summersari Subdistrict of Jember Regency, has a significant elderly population. According to data from the Gladak Pakem Public Health Center (*Puskesmas*), this village falls within a working area that serves the community's health needs across four villages, including Kebonsari. Hypertension represents one of the primary health concerns faced by the elderly population. While specific data regarding the prevalence of hypertension in Kebonsari Village is unavailable, hypertension in older adults generally triggers various complications, such as strokes, heart disease, and kidney failure, if not properly managed. Consequently, it is crucial for the elderly to manage their blood pressure in a safe and effective manner.

The potential utilization of rambusa leaves (*Passiflora foetida*) as an antihypertensive agent has traditionally been recognized for its various health benefits, including its potential to manage hypertension. Active compounds within rambusa leaves, such as flavonoids and alkaloids, are known to help lower blood pressure through vasodilation mechanisms and natural diuretic effects. However, public knowledge, particularly among the elderly, regarding the benefits and preparation methods of rambusa leaves as a herbal medicine remains highly limited. This plant is often dismissed as a mere weed, despite possessing substantial therapeutic benefits. With proper education and training, older adults can be empowered to identify, process, and utilize rambusa leaves as part of managing mild to moderate hypertension.

2. Identification problem

Through this community service program, the proposers provide solutions to the background using lecture methods, interactive discussions, and visual media such as leaflets and short videos to ensure the information is easily understood by the elderly (Mustofa et al., 2024). Educational materials are delivered through direct counseling to the elderly group, covering: the definition of hypertension and its risks in old age, the role of herbal plants in helping lower blood pressure, the active compounds and benefits of rambusa leaves (*Passiflora foetida*) as a natural antihypertensive agent, as well as safe usage and preparation methods. Furthermore, training on herbal preparation is also provided to teach the elderly how to formulate herbal remedies from rambusa leaves, such as making decoctions and dried *simplicia* (Setyaningrum et al., 2024). Blood Pressure Monitoring and Evaluation is conducted by recording the blood pressure of the elderly prior to the intervention to determine the number of elderly individuals suffering from hypertension.

3. Implementation methodology

This community service programme was implemented using a participatory educational approach, emphasizing the active involvement of older adults through health education, practical training, and mentoring. The programme was conducted in four sequential phases to improve participants' knowledge and skills in utilizing rambusa leaves (*Passiflora foetida*) as a complementary herbal remedy for hypertension prevention.

The first phase involved programme preparation and coordination with neighborhood leaders and community health volunteers (kader kesehatan). A baseline survey was conducted to identify eligible participants; namely healthy older adults aged over 60 years with normal to pre-hypertensive blood pressure. During this stage, educational materials, fresh rambusa leaves, and demonstration equipment were prepared to support programme implementation (Mustofa et al., 2024).

The second phase consisted of health counseling and herbal education. Participants received information on hypertension risk factors, the importance of early blood pressure detection, and the potential antihypertensive properties of rambusa leaves based on available phytochemical and pharmacological evidence. Education also emphasized the appropriate use of herbal medicine, including its potential interactions with conventional antihypertensive medications (Rahayu et al., 2024).

The third phase focused on hands-on training in processing rambusa leaves into herbal preparations. Participants practiced preparing herbal decoctions, infusions, and dried simplicia using simple household equipment to ensure that the methods could be replicated independently at home. Guidance was also provided on appropriate dosage, consumption frequency, and storage procedures. The herbal decoction was prepared by boiling 10 fresh rambusa leaves (approximately 6–7 g) in 400 mL of water until the volume was reduced by half, following previously reported preparation methods (Candra et al., 2023).

The final phase involved programme monitoring, evaluation, and follow-up. Participants' understanding was assessed through brief quizzes, while programme acceptability was evaluated using participant satisfaction questionnaires. Feedback obtained during this stage was used to identify opportunities for improving future community-based herbal education programmes (Palupi et al., 2021).

4. Results and Discussion

Implementation Results



Figure 1. Blood pressure screening of participants



Figure 2. Interactive discussion during the health education session



Figure 3. Practical training on preparing rambusa leaf herbal decoction

The community service programme involved 35 healthy older adults in Kebonsari Village. The programme began with baseline blood pressure screening to identify participants' cardiovascular status before the educational intervention. The screening results indicated that 20 participants (57.1%) had systolic blood pressure above 180 mmHg, while 15 participants (42.9%) had normal blood pressure, demonstrating the relevance of hypertension prevention among the target population (Figure 1).

Following the screening, participants attended structured educational sessions on hypertension prevention and the safe use of rambusa leaves (*Passiflora foetida*) as a complementary herbal remedy. Education was delivered through lectures, interactive discussions, leaflets, and short educational videos. Participants actively engaged in the discussion session by asking questions related to hypertension management and the appropriate use of herbal medicine (Figure 2).

The programme continued with practical training on preparing rambusa leaf herbal decoctions using simple household equipment. Participants practiced each preparation step under facilitator supervision, including the appropriate dosage, preparation procedure, and safe consumption of the herbal drink (Figure 3).

At the end of the programme, participants completed a satisfaction questionnaire to evaluate the implementation process. As shown in Table 1, the programme received highly positive feedback across all evaluation aspects. Practical training obtained the highest level of satisfaction, with 97.1% of participants reporting that they were very satisfied, while overall programme satisfaction reached 88.6%.

Table 1. Participant satisfaction with the community service programme (n = 35)

Assessment aspect	Very satisfied, n (%)	Satisfied, n (%)
Relevance of the educational material	30 (85.7)	5 (14.3)
Clarity of material delivery	32 (91.4)	3 (8.6)
Benefits of the programme	33 (94.3)	2 (5.7)
Practical training on herbal preparation	34 (97.1)	1 (2.9)
Opportunity for discussion	31 (88.6)	4 (11.4)
Overall satisfaction	31 (88.6)	4 (11.4)

Note: No participants reported being Moderately Satisfied or Dissatisfied.

Community Impact

The programme improved participants' awareness of hypertension prevention and increased their confidence in utilizing locally available rambusa leaves as a complementary herbal remedy. The high level of participant satisfaction (Table 1) indicates that combining health education with practical demonstrations was well accepted by the community. Participants also demonstrated greater willingness to monitor their blood pressure regularly and seek reliable information regarding herbal medicine. Collaboration with community health volunteers (kader kesehatan) and the primary healthcare centre further strengthened the potential sustainability of the programme through continued education, routine blood pressure monitoring, and referral of elderly individuals requiring medical evaluation.

Discussion and Practical Reflection

The high proportion of participants with elevated blood pressure identified during the initial screening (Figure 1) highlights the importance of community-based hypertension prevention among older adults. Similar studies have reported that educational interventions improve older adults' awareness and self-management of hypertension, including the appropriate use of complementary herbal therapies (Istichomah & Ambarwati, 2024).

The practical training session (Figure 3) was one of the programme's greatest strengths because it enabled participants to directly practice preparing herbal remedies using simple household equipment. This participatory approach supports active ageing by encouraging older adults to become active participants in maintaining their own health. Similar community-based programmes have demonstrated that practical herbal education improves participants' knowledge and engagement in hypertension prevention (Cao et al., 2021).

Although *Passiflora foetida* contains flavonoids, phenolic compounds, and other bioactive substances with antioxidant, anti-inflammatory, and vasodilatory properties, current evidence remains limited to phytochemical and preclinical studies (Chowdhury et al., 2025; Hasanah et al., 2025). Therefore, rambusa leaf preparations should be promoted only as complementary therapy and should not replace prescribed antihypertensive medication. Further standardization and clinical studies are required before routine clinical use can be recommended (Chowdhury et al., 2025; Wang et al., 2026).

5. Conclusion

This community service program improved participants' knowledge, awareness, and practical skills regarding hypertension prevention and the safe preparation of *Passiflora foetida* as a traditional herbal beverage. The program emphasized that herbal medicines should be used responsibly as complementary therapy alongside healthy lifestyle modification and prescribed

antihypertensive treatment. Further clinical studies are required to establish the efficacy, safety, dosage, and standardized pharmaceutical formulations of *Passiflora foetida* before it can be recommended as an evidence-based antihypertensive therapy.

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Recommendations or sustainability plan

To sustain the impact of this community service programme, regular hypertension education and blood pressure screening should be integrated into routine activities conducted by the primary healthcare centre (Puskesmas) and community health volunteers (kader kesehatan). Participants are encouraged to continue adopting healthy lifestyles and to use rambusa leaf (*Passiflora foetida*) only as a complementary therapy under the guidance of healthcare professionals, without replacing prescribed antihypertensive medications. Future community programmes should strengthen collaboration among healthcare providers, local communities, and academic institutions while supporting further clinical research to establish the safety, efficacy, and standardized use of *Passiflora foetida* for hypertension management.

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