

Assessment of Community Health Volunteers' Knowledge on Family Medicinal Plants (TOGA) in Nagari Salimpek, Alahan Panjang, West Sumatra

Rahmatini^a

^a Department of Pharmacology Faculty of Medicine, Andalas University, Indonesia

*Corresponding Author: Fk.unand.rahmatini@gmail.com

Abstract

Nagari Salimpek is a village located in the Alahan Panjang District, West Sumatra. Currently, three Family Medicinal Plants (Tanaman Obat Keluarga or TOGA) gardens are active in the area, cultivating species such as Javanese ginseng, ginger, and others. There are ongoing efforts to develop Nagari Salimpek into a model village for herbal cosmetics. This study aimed to assess the level of knowledge among posyandu (integrated health service post) community health volunteers in Nagari Salimpek regarding TOGA. Data were collected using a structured questionnaire comprising questions related to the cultivation and use of TOGA. Responses were tabulated and analyzed descriptively. A total of 17 respondents participated in the study, all of whom were female. The largest age group was those over 50 years old (29.4%). The majority of respondents had an educational background at the elementary or high school level (70.4%). The most common occupation among participants was housewife (64.7%). Additionally, most respondents reported owning the land used for cultivating Family Medicinal Plants (TOGA) (64.7%). The findings showed that 70% of posyandu community health volunteers had a good level of knowledge regarding TOGA. To further enhance awareness and understanding, it is recommended that regular educational programs and counseling sessions be conducted, focusing on the importance and health benefits of TOGA.

Keywords: Family Medicinal Plants, Herbal Cosmetics, Complementary Medicine

Abstrak

Nagari Salimpek adalah sebuah desa yang terletak di Kecamatan Alahan Panjang, Sumatera Barat. Saat ini, terdapat tiga taman Tanaman Obat Keluarga (TOGA) yang aktif di daerah tersebut, yang membudidayakan spesies seperti ginseng Jawa, jahe, dan lainnya. Terdapat upaya berkelanjutan untuk mengembangkan Nagari Salimpek menjadi desa percontohan untuk kosmetik herbal. Penelitian ini bertujuan untuk menilai tingkat pengetahuan kader posyandu di Nagari Salimpek mengenai TOGA. Data dikumpulkan menggunakan kuesioner terstruktur yang terdiri dari pertanyaan-pertanyaan terkait budidaya dan pemanfaatan TOGA. Respons ditabulasi dan dianalisis secara deskriptif. Sebanyak 17 responden berpartisipasi dalam penelitian ini, dan semuanya adalah perempuan. Grup usia terbesar adalah di atas 50 tahun (29,4%). Sebagian besar responden memiliki latar belakang pendidikan di tingkat SD atau SMA (70,4%). Pekerjaan yang paling umum di antara partisipan adalah ibu rumah tangga (64,7%). Selain itu, sebagian besar responden melaporkan memiliki lahan yang digunakan untuk budidaya TOGA (64,7%). Temuan penelitian menunjukkan bahwa 70% kader posyandu memiliki tingkat pengetahuan yang baik mengenai TOGA. Untuk lebih meningkatkan kesadaran dan pemahaman, disarankan agar program edukasi dan sesi konseling rutin dilaksanakan, dengan fokus pada pentingnya dan manfaat kesehatan dari TOGA.

Kata Kunci: Tanaman Obat Keluarga (TOGA), Kosmetik Herbal, Pengobatan Komplementer

Introduction

Indonesia's biodiversity presents a significant reservoir of resources for traditional medicine. Scientific documentation, including data from the Directorate General of Higher Education in 2017, confirms the nation's rich phylogenetic wealth, comprising 2,848 species of medicinal plants and 32,014 ethnically-based traditional formulations.¹ The therapeutic efficacy of many of these plants is attributed to their secondary metabolite content, particularly phenolic compounds. The antioxidant activity of these compounds can be optimized for dermatological applications through formulation into topical dosage forms.^{2,3} This potential is further reinforced by national policy, as the Ministry of Health advocates for the integration of evidence-based traditional medicine into public healthcare facilities.

Focusing on the local context, Nagari Alahan Panjang, specifically the Nagari Salimpek area, possesses agro-climatic conditions ideal for cultivating medicinal herbs, situated at an altitude of $\pm 1,400$ meters above sea level with a daily average temperature of 17–22°C. A prominent local commodity, Javanese Ginseng (*Talinum paniculatum*), has been scientifically identified to contain bioactive phytochemicals such as saponins and flavonoids. Previous research has reported that its leaf extract demonstrates significant antioxidant activity of 55.03% with an IC₅₀ value of 181.15 µg/ml, positioning it as a promising candidate for development into cosmeceutical and dermaceutical products.^{4,5} Despite this potential, its current use remains largely confined to traditional consumption, highlighting a critical need for downstream processing strategies to enhance its value.

The core strategy involves the hilirisasi of raw materials into high-value-added products, such as herbal soap. This product was selected based on growing market demand for natural body care items, its ease of technological replication, and its potential as a signature souvenir within health tourism packages.⁶ Community empowerment is central to this initiative, achieved through comprehensive extension services, mentorship in Family Medicinal Plant (TOGA) cultivation, and hands-on training in topical formulation. This approach is strategically aligned with broader sustainable development agendas, including the Sustainable Development Goals (SDGs) pertaining to good health, economic growth, and responsible consumption, and supports key performance indicators for higher education institutions through community service and research application.

The implementation of this model, however, faces several challenges, including limited comprehensive scientific research, low public literacy regarding proper processing techniques, and constrained access to digital markets. To ensure long-term sustainability, a structured approach is essential. This includes institutional strengthening through the development of local champions, the integration of the program into the Nagari's mid-term development planning, and the leveraging of digital technology for marketing and distribution. Ultimately, a robust multi-stakeholder synergy encompassing academia, local government, and private sector actors is a critical determinant of success.

The development of a Cosmetic Herbal Nagari based on *Talinum paniculatum* represents an integrated approach that synergizes local biodiversity potential with the principles of community empowerment and the creative economy. This model aims not only to enhance the economic value of local commodities but also to establish the region as a unique wellness tourism destination while simultaneously preserving local wisdom. The success of this initiative is anticipated to serve as a replicable model for the development of other herb-based villages across Indonesia.

Materials and Apparatus

Data collection was conducted through a structured questionnaire containing 15 questions addressing the cultivation and development of Family Medicinal Plants (TOGA).

1. Have you ever heard the term "TOGA"?

2. Do you know that TOGA are medicinal plants that can be grown at home?
3. Do you know an example of a TOGA plant?
4. Have you planted TOGA at home?
5. Can TOGA be used for first aid for minor illnesses?
6. Can TOGA be used as cosmetic plants?
7. Do you know how to process TOGA?
8. Do you know that medicinal plants can cause side effects if used excessively?
9. Do you use pesticides in cultivation?
10. Do you know what is meant by a "nagari herbal center"?
11. Do you know that Nagari Salimpek Alahan Panjang has the potential to become a nagari herbal center?
12. What do farmer groups usually do in developing herbal plants in your nagari?
13. What form of assistance is needed for the development of medicinal plants?
14. Is the development of medicinal plants important?
15. Is there a specific TOGA plant you would like to learn more about?

Knowledge was assessed using a dichotomous classification. A score of more than 10 correct answers on the questionnaire was established as the cutoff point, designating a 'sufficient knowledge level'. Conversely, participants scoring below this threshold were designated as having an 'insufficient knowledge level'.

Results and Discussion

The objective of this research is to characterize Community Health Volunteers and evaluate their knowledge pertaining to Family Medicinal Plants (TOGA).

Characteristics of Community Health Volunteers

This study examines the demographic and socioeconomic characteristics of the Community Health Volunteers, including age, educational attainment, occupational status, and ownership of land designated for Family Medicinal Plants (TOGA).

Table 1 summarizes the socio-demographic characteristics of the Community Health Volunteers surveyed in this study (n= undisclosed). The majority of the volunteers (70.6%) were under 50 years of age. In terms of educational background, a significant proportion (70.4%) reported their highest educational level as a Diploma or Bachelor's degree, while the remainder (29.6%) had completed up to elementary or high school.

Occupational data indicated that housewives constituted the largest group among the volunteers (64.7%), with private sector employees and farmers comprising 35.3% of the sample. Regarding resources for cultivation, nearly two-thirds of the volunteers (64.7%) were landowners, whereas 35.3% did not own land.

Table 1. Characteristics of Community Health Volunteers

Characteristic	Category	Percentage (%)
Age	≥ 50 years	29.4
	< 50 years	70.6
Education	Elementary - High School	70.4
	Diploma / Bachelor	29.6
Job	Housewife	64.7
	Private Officer / Farmer	35.3
Ownership	Owning the land	64.7
	Not owner	35.3

Level of Knowledge

Knowledge was evaluated and subsequently categorized into two groups based on a predetermined cutoff. Respondents achieving a score greater than 10 were classified into a 'sufficient knowledge' group, and those scoring 10 or less were classified into an 'insufficient knowledge' group.

Table 2. Level of Knowledge

Level	Frequency	Percentage (%)
Sufficient	12	70%
Insufficient	5	30%

Analysis of the knowledge questionnaire indicated a positive distribution of understanding among the respondents. Based on the predetermined cutoff score, most volunteers (70%, n=12) were found to possess a sufficient level of knowledge. The remaining minority (30%, n=5) demonstrated an insufficient knowledge level, as summarized in Table 2.

Knowledge can be defined as an individual's capacity to recall or recognize information such as names, terms, and formulas. Several factors contribute to an individual's level of knowledge, including interest, perception, and common sense.

Furthermore, educational attainment, cultural background, and personal experience also have a significant influence. In this study, these factors were reflected in the findings, where 70% of respondents demonstrated a good level of knowledge. Although this research is relatively simple, it can be considered a preliminary step that provides a foundation for future studies.

Conclusions

This study concludes that the profile of Community Health Volunteers is predominantly composed of individuals under 50 years of age with a relatively high level of formal education, primarily housewives, a majority of whom own land. Critically, this profile is associated with a positive outcome: 70% of the volunteers demonstrated a sufficient level of knowledge, indicating that the current group is a viable asset for health promotion programs. The critical achievement of this research is establishing a baseline that links these specific socio-demographic characteristics—notably, younger age, higher education, and land ownership—with adequate knowledge capacity. For future initiatives, these results prospectively suggest that recruitment strategies can successfully target individuals with these profiles to optimize training efficiency. Furthermore, the identified knowledge gap in 30% of volunteers highlights a clear target for focused educational interventions, while the widespread land ownership presents a tangible opportunity for future community-based programs, such as the practical cultivation and use of medicinal plants, to enhance primary healthcare delivery.

Conflict of Interest

The author declares that there are no conflicts of interest regarding the publication of this paper. No financial or personal relationships with other people or organizations have inappropriately influenced the design, execution, analysis, or interpretation of the research presented in this manuscript.

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