

## Empowerment of Students in Al Mubarak Sudiang Islamic Boarding School through Medicinal Plant Cultivation and Utilization

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### Abstract

Based on interviews with a partner, the following community partner issues were lack of medicinal plants gardens around the Al Mubarak Sudiang Islamic boarding school, lack of knowledge and introduction to the types of plants with medicinal properties, and lack of knowledge about the health benefits of medicinal plants. Using traditional medicinal plants is the community's active participation in solving health problems. The community service partner were students in Al Mubarak boarding school. The solution to overcome the partner's problems was empowerment with a participatory learning approach emphasizing learning through consultation, training, coaching, and demonstration/simulation of medicinal plant cultivation and utilization. Then, the authors evaluated program implementation and sustainability before and after activities. The evaluation showed increased achievement levels in all success indicators. Thus, this community service had significant benefits for all participants. In conclusion, the empowerment of students in Al Mubarak Sudiang Islamic Boarding School can increase their knowledge in medicinal plants cultivation and utilization, skills in medicinal plants cultivation, and medicinal plants utilization. The local government should support and participate in the sustainability of this community service through small industries producing healthy drinks from medicinal plants.

**Keywords:** Empowerment; Students; Cultivation; Utilizing; Medicinal plant

### Abstrak

Berdasarkan wawancara dan survei pendahuluan dengan mitra, permasalahan mitra masyarakat berikut adalah: kurangnya taman tanaman obat di sekitar pondok pesantren Al Mubarak Sudiang, kurangnya pengetahuan dan pengenalan jenis-jenis tumbuhan berkhasiat obat, kurangnya pengetahuan tentang manfaat tanaman obat bagi kesehatan. Pemanfaatan tanaman obat tradisional merupakan partisipasi aktif masyarakat dalam memecahkan masalah kesehatan. Mitra pengabdian masyarakat ini adalah santri di Pondok Pesantren Al Mubarak.. Solusi untuk mengatasi kendala mitra adalah pemberdayaan dengan pendekatan pembelajaran partisipatif yang menekankan pembelajaran melalui konsultasi, pelatihan, pembinaan, dan demonstrasi/simulasi budidaya dan pemanfaatan tanaman obat. Kemudian, penulis mengevaluasi pelaksanaan dan keberlanjutan program sebelum dan sesudah kegiatan. Evaluasi menunjukkan peningkatan tingkat pencapaian di semua indikator keberhasilan. Dengan demikian, pengabdian masyarakat ini memiliki manfaat yang signifikan bagi seluruh peserta. Kesimpulan, pemberdayaan santri di Pondok Pesantren Al Mubarak Sudiang dapat meningkatkan pengetahuan dalam budidaya dan pemanfaatan tanaman obat, keterampilan dalam budidaya tanaman obat, dan pemanfaatan tanaman obat. Pemerintah daerah harus mendukung dan berpartisipasi dalam keberlanjutan pengabdian masyarakat ini melalui industri kecil yang memproduksi minuman sehat dari tanaman obat.

**Kata kunci:** Pemberdayaan; Siswa; Penanaman; Memanfaatkan; Tanaman obat

## **INTRODUCTION**

Medicinal plant cultivation is essentially land in the yard, garden, or field used to cultivate plants effective as medicines to meet the needs of the family and the community for drugs (Ahdani, 2014). Each medicinal plant requires a unique set of environmental conditions to grow and develop properly. Climate and soil are two crucial ecological components for its growth. Several climate factors, including temperature, rainfall, and sunlight, directly impact its growth (Anita, Zubir, and Amani, 2017). Using traditional medicine derived from plants is the community's active participation in solving health problems. Various nations have recognized its role in improving the community's health. The World Health Organization (WHO) recommends using traditional medicines, including herbal medicines, to maintain public health, disease prevention, and treatment (Badan Pusat Statistik Indonesia, 2008).

The Indonesian government establishes Primary Health Care (PHC) as a strategy to achieve universal health coverage. Primary Health Care includes using traditional medicines derived from medicinal plants. One of the essential aspects of PHC is using appropriate technology and community participation in traditional medicine, especially medicinal plants. (Sambara et al., 2016)

## **SITUATION ANALYSIS**

### **General Description**

The community service partner were students in a boarding school with approximately 150 male and female students. Al Mubarak Sudiang Islamic Boarding School is a semi-modern Islamic boarding school on the outskirts of Makassar, combining Islamic religious knowledge and special skills (such as brick making and gardening). It is located in the Pai sub-district, Biringkanaya sub-district, Makassar (about 18 kilometres from Makassar). Al Mubarak Sudiang Islamic Boarding School had a vacant lot turned into a garden. However, the garden was not well-organized and was planted with various plants but not too many medicinal plants (Figure 1). Al Mubarak Sudiang Islamic Boarding School has sufficient land, adequate human resources, climate support, and fertile soil. Those resources can aid in the establishment of medicinal plant gardens. In addition, procurement of medicinal plant gardens was crucial in Al Mubarak Sudiang Islamic Boarding School.

UNUSA



**Figure 1.** Students in the Al Mubarak Sudiang Islamic Boarding School cultivate various plants

## Problems

Based on interviews and preliminary surveys with a partner, the following community partner issues were: 1. lack of medicinal plants gardens around the Al Mubarak Sudiang Islamic boarding school; 2. lack of knowledge and introduction to the types of plants with medicinal properties; 3. lack of knowledge about the health benefits of medicinal plants.

## Target Solutions

The solution to overcome the partner's problems was empowerment with a participatory learning approach emphasizing learning through consultation, training, coaching, demonstration/simulation of medicinal plant cultivation, and utilization. The purposes of the participatory learning approach or Learning-by-doing activities were: 1) Sensitising partners on the importance and benefits of medicinal plants for health, 2) Raising awareness of the need to establish a medicinal plant garden at Al Mubarak Sudiang Islamic Boarding School to improve the health of students, 3) Increasing knowledge about different types of medicinal plants, 4) Using science and technology through training, demonstration, coaching, and mentoring to cultivate medicinal plants. (Masita & Maimunah, 2019)

Thus, steps in these community service activities included: 1) outreach to potential partners, 2) consultation on the importance of medicinal plant gardens in the community, especially in Islamic boarding schools, 3) introduction and identification of plant species that have medicinal properties, 4) establishment of a medicinal plant garden in the area of Al Mubarak Sudiang Boarding School, and 5) demonstrations, training, coaching, and support in medicinal plants cultivation and utilizing.

## METHOD

The following procedures of the community service implementation were:

- 1) The authors approached and informed partners about the goals of community service activities. The partner was students in modern Islamic boarding school-based educational institution from different social backgrounds, ethnicities, and activities. Therefore, a method to reach out and connect with them could facilitate community service implementation. The authors also arranged a meeting with the Islamic boarding school manager to explain the purpose of these community service activities. (Masita, Elly Dwi, 2018)

- 2) The authors organized consultations on medicinal plants gardens and the optimal use of medicinal plants for health. This consultation socialized the design of medicinal plant gardens by identifying the types of medicinal plants based on their typical growing locations.
- 3) The authors organized counseling and demonstration of medicinal plants cultivation according to the material from the previous consultation (point 2). This training was more detailed and aimed to increase students' knowledge and skills with the following materials for cultivating medicinal plants:
  - a) Preparation and management of the soil, including the establishment of beds and the use and management of organic compost. The procedures for constructing boundary fences and plant beds were: (1) Preparing all the tools and materials; (2) Constructing garden borders using bamboo as the primary material, depending on the size of the garden area; (3) Placing plastic trellises in some beds to allow medicinal plants to grow; (4) making plant beds in a pre-determined location. The angle and direction of sunlight determined each group of beds' length, width, and thickness. In addition, the plant beds were laid out from east to west;(Fithri et al., 2017; Fitrawaty et al., 2018; Masita et al., 2019)
  - b) preparation and selection of high-quality medicinal plant seed for generative propagation through seeds and vegetative propagation through cuttings, grafts, grafting, and sprouts;
  - c) Planting medicinal plant seeds raised in a nursery;
  - d) Caring for plants through fertilizing, watering, weeding, hoarding, and controlling pests and diseases
- 4) Instruction and supervision of students in using medicinal plants for health, including processing preparations of leaves, bark, tubers, rhizomes/rhizomes, seeds, and fruits. In addition, it included the drying process, storage of preparations, and the use of preparations (such as dosing and cooking).

The community service team used active participation in these community service activities. Active participation included students' presence, discipline, and activity at each stage of community service activities. In addition, it contained morals, energy, and thought of partners' participation in each activity. The authors actively communicate and interact with the partners by discussing and making suggestions during and after activities. The authors assessed student participation through an attendance list, a list and schedule of activities at the daily, weekly, and monthly levels, and a monthly progress report (Anita et al., 2017)

Further, the community service team distributed questionnaires and interviewed students to evaluate the program. We assessed program implementation and sustainability before and after activities. The evaluations in this community service activities were: 1) The initial assessment to determine the students' knowledge levels and understanding of medicinal plants and their health benefits; 2) The final assessment to find out student's responses, knowledge, and understanding of each activity performed.

## RESULTS AND DISCUSSIONS

The following were the steps for the empowerment of students in Al Mubarak Sudiang Islamic Boarding School:

a. Planning and licensing

1) Collaboration with the implementation team

A joint team from the Poltekkes Kemenkes Makassar and the University of Muhammadiyah Semarang carried out this community service activity. The team coordinated to prepare for community service. Coordination with the team resulted in the following agreements:

- a) The target was students in Islamic Boarding School
  - b) Number of Participants Involved
  - c) Adherence to implementing health protocols in carrying out community service during the CoViD-19 pandemic
- b. Collaboration with the target

There was a coordination between the community service team and the managers of Al Mubarak Islamic Boarding School students in the Pai sub-district, Biringkanaya sub-district. All parties agreed to carry out community service activities during learning activities in the boarding school, following health protocols.

c. Field survey

The community service team conducted a survey in the Al Mubarak Sudiang Islamic Boarding School to learn about the policies and activities implemented at the Islamic Boarding School during the Covid-19 pandemic. The survey showed that the boarding school was enthusiastic about this community service project.

d. Counseling and demonstration implementation

1) Counseling and demonstration on cultivating medicinal plants

This activity was attended by students and supervisors of the Al Mubarak Sudiang Islamic boarding school. All participants were very interested in learning about medicinal plant cultivation. The activity began with data collection on medicinal plants in the Al Mubarak Sudiang Islamic Boarding School garden, followed by 30 minutes of counseling on medicinal plants cultivation.

2) Counseling and demonstration on using medicinal plants

The community service team conducted counseling and demonstration on using medicinal plants to the target community. The participants were ecstatic to be a part of this activity. Furthermore, one demonstrated preparation was fig leaves (*Ficus carica L.*) decoction. The participants tried the processed results of the medicinal plants. They testified that the preparation was refreshing and positively affected the body, marked by sweating a few minutes later after drinking it. (Anita et al., 2017)

Materials and tools for making fig leaves decoction were scales, wooden spoons, portable stoves, gas, bowls, plastic, earthenware pots or pans made of stainless steel, and glass. In addition, the following ingredients were dried fig leaves, two medium glasses of mineral water, one tablespoon of honey, a pinch of salt, and 1-2 cardamom grains. Furthermore, the processing methods were: 1) taking up to 9 pieces of dry fig leaves and crushing them before being placed in the pot; 2) pouring up to 2 cups of mineral water into a pot; 3) preheating the pot to medium heat (without lid); 4) allowing it to boil for about 100 degrees Celsius; 5) allowing the water to shrink until there was only 1 cup of water left; 6) turning off the heat, removing the pot, and allowing the fig leaves concoction to warm before drinking. (Hadi & Ardhi Khairi, 2020)

The community service team gave questionnaires before (pre-test) and after (post-test) counseling and demonstration on cultivating and utilizing medicinal plants to all participants. The evaluation aimed to determine knowledge levels acquired during the activity. In addition, it also assessed achievement levels of the planned objectives using several success indicators in Table 1. The evaluation showed increased achievement levels in all indicators. Thus, this community service had significant benefits for all participants.

**Table 1.** Evaluation Before and After Community Service

No	Success Indicators	Evaluations	
		Before	After
1.	Partners were knowledgeable about the various types of medicinal plants	50%	90%
2.	Partners were knowledgeable about the advantages of medicinal plants	50%	99%
3.	The number of partners who cultivated medicinal plants	50%	100%
4.	Partners were knowledgeable about medicinal plant cultivation	50%	100%
5.	The number of partners who utilized medicinal plants	10%	99%
6.	Partners could identify and categorize medicinal plants	10%	97%

## CONCLUSIONS AND SUGGESTIONS

The empowerment of students in Al Mubarak Sudiang Islamic Boarding School can increase their knowledge in medicinal plants cultivation and utilization, skills in medicinal plants cultivation, and medicinal plants utilization. The local government should support and participate in the sustainability of this community service through small industries producing healthy drinks from medicinal plants.

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