

## Effectiveness of Focus Group Discussion Education on Health Cadres Knowledge of Managing Butterfly Pea Flowers and Red Guava Leaves

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### Abstract

*Public knowledge concerning health, particularly the management of medicinal plants in both community and household settings, remains limited. Knowledge can be enhanced through various interventions, such as focus group discussions (FGDs). This study contributes to examining the impact of FGD education on improving the understanding of Butterfly Pea Flowers (*Clitoria ternatea*) and Red Guava Leaves (*Psidium guajava* L.) management on health cadres' knowledge in Srimartani Village, Piyungan, Bantul, Yogyakarta, Indonesia. The research is categorized as a quasi-experimental group pre-and post-test, with a sample size of 14 participants from the female farmer group (known as Kelompok Wanita Tani/KWT in Indonesia) chosen via purposive sampling. The FGD education consisted of the opening, implementation, and closing phases, while data analysis employed a questionnaire and quantitative research techniques utilizing the Wilcoxon test ( $\alpha = 0.05$ ). The findings revealed that the average knowledge scores of the respondents increased from 7.43 to 20.64 after the FGD educational intervention. The Wilcoxon test yielded a  $p$ -value of 0.001, indicating a significant effect of FGD education on the management of butterfly pea flowers and red guava leaves. Therefore, FGD education demonstrated a noteworthy influence on knowledge of *Clitoria ternatea* and *Psidium guajava* management in Srimartani Village, Piyungan, Bantul, and Yogyakarta, Indonesia.*

**Keywords:** Discussion; Herbs; *Clitoria ternatea*; *Psidium guajava*; Knowledge

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### 1. Introduction

The public's knowledge regarding health, particularly in managing medicinal plants within community and family environments, is still significantly low (Astutik et al., 2019). Some studies indicate that the community's management of herbal plants still varies, and only a tiny portion of them utilize and benefit from plants grown in their home gardens (Gonfa et al., 2020). Most current herbal plant management in the community is done simply by boiling the plant leaves (Supiandi et al., 2019).

Based on the World Health Organization (WHO), approximately 60% of the global population utilizes herbal medicine, and in developing nations, nearly 80% of the population relies heavily on herbal medicine as their main source of primary healthcare (Khan & Ahmad, 2019; WHO, 2019).

In Malaysia, the diversity and population status of ethnomedicinal plants in the home gardens of Kampung Masjid Ijok, along with the traditional knowledge associated with them, were documented in this study. The findings indicated that many medicinal plants can still be found in home gardens and are utilized to treat different ailments (Ramli et al., 2021).

A study on the utilization of herbal plants in Indonesia has reported that the knowledge of herbal plant usage remains traditional and dependent on the availability of plants in the local surroundings. For instance, in the province of Aceh, older individuals were found to possess more knowledge about medicinal plants than younger generations, suggesting that traditional knowledge is diminishing over generations (Navia et al., 2021). The results of another study revealed that 20% of the documented medicinal plants were consumed directly, while others underwent various methods of

processing and preparation, such as boiling (51%), crushing (15%), roasting (2%), soaking (16%), and pasting (7%), and a single species can have multiple uses (Pandiangan et al., 2019).

Some of the factors that impact the management or utilization of family medicinal plants (known as Tanaman Obat Keluarga/TOGA in Indonesia) in enhancing public health encompass insufficient awareness and challenges in accessing specific herbal remedies, as well as a preference for self-medication (Rahayu et al., 2020). A low level of knowledge will impact the suboptimal utilization of medicinal plants, leading to ineffective health management. Therefore, it is necessary to enhance public knowledge of managing medicinal plants through interventions. One such intervention is FGD. FGD, also known as focus group discussion, is a frequently used method for gathering research data. The FGD method uses group interactions to generate data and insights (Khan & Abedin, 2022). In addition to the FGD method, various creative learning methods can increase one's knowledge (Rustini et al., 2022).

The women farmer group (known as Kelompok Wanita Tani/KWT in Indonesia) program in the Kwasen hamlet of Srimartani Village has been observed to be effective in promoting the utilization of TOGA. However, community members lack

knowledge regarding the management of butterfly pea flowers and red guava leaves, which are commonly grown in community yards. Motivated by these findings, the researcher aims to investigate the impact of FGD education on enhancing the knowledge of *Clitoria ternatea* and *Psidium guajava* L. management in Srimartani Village, Piyungan, Bantul, and Yogyakarta. This research contribution seeks to determine the influence of FGD education on improving the understanding of managing *Clitoria ternatea* and *Psidium guajava* in the mentioned village.

## 2. Method

Quasi-experimental research was used in this study. The sample for this study consisted of 13 participants from the female farmer group in Srimartani Village, Piyungan, Bantul, and Yogyakarta. The sampling technique employed is purposive sampling. The inclusion criteria for this study were as follows: female farmer group in Srimartani Village aged  $\geq 30$  years; female farmer group members willing to complete the questionnaire and provide informed consent; female farmer group members who have a yard or garden; KWT members who cultivate family medicinal plants; and ability to understand the Indonesian language (Figure 1).

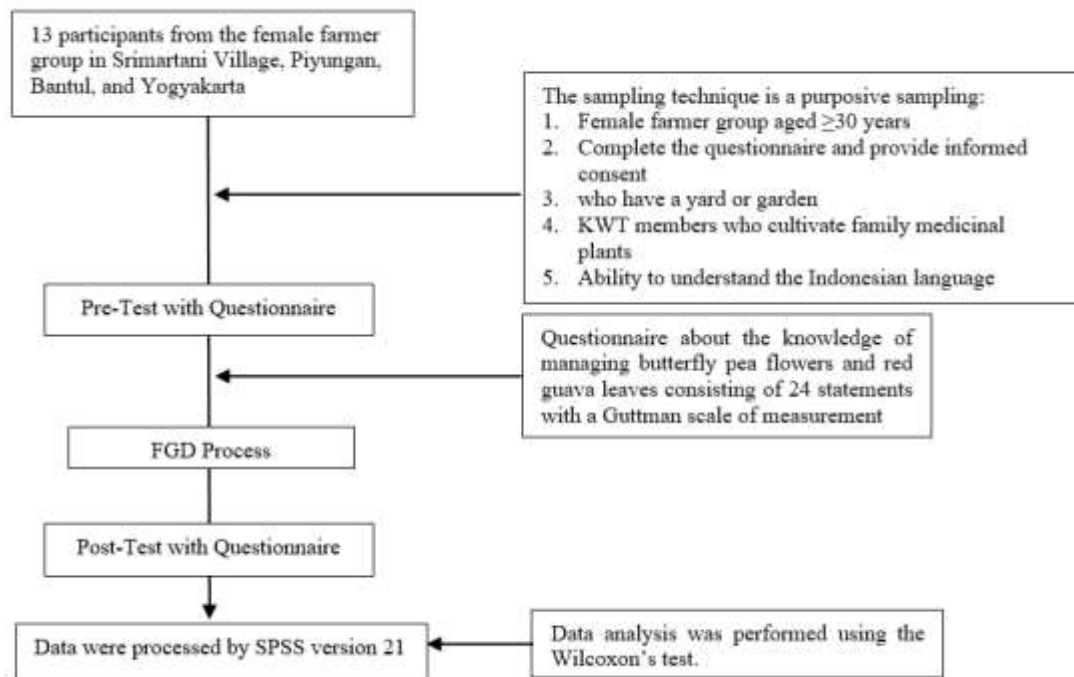


Figure 1. Flowchart of Research

This study was conducted on February 2023. The data collection instrument used was a validated questionnaire on the knowledge of managing butterfly pea flowers and red guava leaves consisting of 24 statements with a Guttman

measurement scale. The questionnaire provided response options "True," "False," and "Don't Know." For favorable statements, "True" was assigned a value of 1, "False" was assigned a value of 0, and "Don't Know" was assigned a value of 0.

For unfavorable statements, "True" was assigned a value of 0, "False" was assigned a value of 1, and "Don't Know" was assigned a value of 0. Data analysis was performed using Wilcoxon's test.

This research study strictly follows ethical guidelines (code: 148.3/FIKES/PL/X/2022), ensuring participants' rights, privacy, and confidentiality. Approved by the ethics committee Faculty of Health Sciences, Universitas Respati Yogyakarta, Indonesia, informed consent is obtained. Data is handled carefully, considering risks and benefits and adhering to data protection regulations. Findings are reported accurately, maintaining participant anonymity. Research ethics uphold the highest standards.

### 3. Results and Discussion

Based on Table 1, it is known that the characteristics of the 14 clients of the female farmer group are predominantly as follows: in terms of age, the majority are in late adulthood, with eight individuals (57.20%); in terms of highest education level, the majority had a college education, with six individuals (42.80%); and in terms of occupation, the majority were housewives, with nine individuals (64.3%).

**Table 1.** Frequency distribution data of respondents (n=14)

Respondents' Characteristics	Frequency (n)	Percentage (%)
<b>Age</b>		
25-34 years (early adulthood)	1	7.1
35-44 years (late adulthood)	8	57.2
45-54 years (early elderly)	4	28.6
55-64 years (late elderly)	1	7.1
<b>Education</b>		
Junior High School	4	28.6
Senior High School	4	28.6
College	6	42.8
<b>Occupation</b>		
Farmer	2	14.3
Teacher	2	14.3
Merchant	1	7.1
Housewife	9	64.3

Based on Table 2, it can be observed that the knowledge scores of the 14 clients of the women.

**Table 2.** The knowledge of managing *Clitoria ternatea* and *Psidium guajava* before and after conducting Focus Group Discussion education among the women farmer group (KWT) in Srimartani Village, Piyungan, Bantul, Yogyakarta (n=14)

Knowledge	N	Min	Max	Mean	Median	SD	Mean Difference	P Value
Before	14	0	16	7.43	7.00	5.214	13.21	0.001
After	14	17	23	20.64	21.00	1.865		

The distribution of respondents based on education showed that the majority of respondents had a bachelor's degree, which states that higher education refers to educational levels beyond secondary education, including diplomas,

Farmer group show that the average knowledge score of the respondents before and after the FGD education intervention is 7.43 and 20.64, respectively. The median knowledge scores of the respondents before and after the FGD education intervention were 7.00 and 21.00, respectively. The standard deviations of the respondents' knowledge scores before and after the FGD education intervention were 5.21 and 1.87, respectively. The minimum and maximum knowledge scores of the respondents before and after the FGD education intervention were 0.00, 17.00, 16.00, and 23.00, respectively. Based on these data, it can be concluded that there is an improvement in the knowledge of managing *Clitoria ternatea* and *Psidium guajava* L before and after the implementation of Focus Group Discussion education.

Based on Table 2, it is found that knowledge, as measured by the Wilcoxon test, shows that the average knowledge score before FGD education is 7.43 and after FGD education is 20.64, with a difference of 13.21. There was an increase in knowledge from 7.43 to 20.64. The intervention using FGD education yielded a significant p-value of 0.001 < 0.05, indicating a significant difference between knowledge before and after FGD education. In conclusion, based on the Wilcoxon test, the management of butterfly pea flowers and red guava leaves in Srimartani Village, Piyungan, Bantul, Yogyakarta, Indonesia has influenced the management of butterfly pea flowers and red guava leaves.

This study shows that most respondents were in late adulthood. Late adulthood is the age at which intellectual development and experience increase, improving acquired knowledge. Theoretically, age influences an individual's understanding and thinking process; the older a person becomes, the better is their mental development process. However, after a certain age, mental development does not progress as quickly as it does during adolescence. Increasing age can affect the amount of information that is received (Li et al., 2020).

bachelor's, master's, specialization, and doctoral degrees. The higher the level of education, the easier it is to access information, resulting in a greater amount of knowledge and vice versa (Castro, 2019).

The distribution of respondents based on occupation showed that the majority of respondents were homemakers (64.3%). Women, as homemakers, have memory capacity and experience using medicinal plants. The capacity of the human brain memory is influenced by sex. Women tend to have more time for discussion than men do. Women are also more attentive to health issues, thus understanding and remembering the use of medicinal plants by themselves and their families. Concentration and intelligence levels based on gender favor women over men (Borgonovi & Greiff, 2020). Acceptance of information is closely related to an individual's interests. Someone knows that they are at risk of a certain disease, and they become more cautious about maintaining their health. One way to maintain health is to seek information related to the diseases they may experience. The same applies to respondents who have family medicinal plants but are unaware of how to manage them. They developed an interest in receiving education or health-related information about family medicinal plants (Benkhniue et al., 2022; Lyngdoh, 2022).

FGD aims to obtain in-depth information about a group of people's thoughts, feelings, attitudes, values, and beliefs regarding a specific topic or phenomenon. Additionally, it aims to create change by increasing the knowledge of the discussed topic/phenomenon. Change can also occur in the form of awareness of the topic being discussed. This process of awareness can influence the future behaviors of the community (Chen & Lin, 2019). The topic of this study is the management of *Clitoria ternatea* and *Psidium guajava* L.

Research results conducted by researchers reinforce this theory. Based on Table 2, it can be observed that the knowledge scores of the 14 clients from the women farmers group show an average value of knowledge before and after the FGD education intervention, which is 7.43 and 20.64, respectively. From these data, it can be concluded that the FGD education intervention significantly improved the respondents' knowledge. The education conducted in this research utilized FGD, in which in-depth interviews were conducted with all the respondents. This can assist the respondents in understanding the information about the management of *Clitoria ternatea* and *Psidium guajava* L that was delivered and discussed together. This research is further supported by a study conducted where indicating the influence of the FGD education method on knowledge (Bibon, 2022).

Based on Table 3 indicating a significant difference between knowledge before and after FGD education. Therefore, it can be concluded that there had a significant influence on the

management of *Clitoria ternatea* and *Psidium guajava* L.

**Table 3.** Knowledge before and after FGD education

Knowledge	Mean±SD	Median (Min-Max)	P Value
Before	7.43±5.21	7.0(0.0-16.0)	0.001*
After	20.64±1.87	21.0(17.0-23.0)	

The FGD method allows active participation of participants and provides them with an opportunity to discuss their opinions and share experiences with other participants. Therefore, by utilizing the advantages of the FGD education method, respondents find it easier to accept the information provided and enhance their knowledge (Candradewi et al., 2021). The process of changing one's knowledge is accomplished through input approaches involving human, technical, and financial resources. The process approach includes improving the physical environment, implementing behavior-change communication strategies, enhancing community capacity, and increasing individual capacity. Finally, the outcome approach refers to the desired change in knowledge (Franco & Tracey, 2019).

FGD is a valuable method for improving the knowledge and understanding of medicinal plant management (Salim et al., 2019). FGD provides an interactive and participatory platform where individuals can actively engage in discussions, share their experiences, and exchange information related to medicinal plant management. Through this collaborative approach, several factors contribute to the effectiveness of FGD in enhancing knowledge in this domain.

FGD allows the active participation of multiple individuals with diverse backgrounds and perspectives. Participants, including experts, practitioners, and community members, could provide unique insights and experiences regarding medicinal plants. This exchange of knowledge creates a rich learning environment, facilitating a broader understanding of the various aspects of medicinal plant management.

FGD promotes peer learning and social interaction. Participants can learn from one another's experiences, best practices, and challenges in managing medicinal plants. The open and inclusive nature of FGD encourages active listening and dialogue, enabling the sharing of tacit knowledge that may not be readily available in written or formal sources. Participants could discuss different techniques, cultivation methods, and traditional practices, providing a comprehensive understanding of effective medicinal plant management strategies.

FGD fosters critical thinking and problem-solving skills (Wale & Bishaw, 2020). Participants were encouraged to analyze and evaluate different



approaches for managing medicinal plants. They can identify gaps in existing knowledge and explore innovative solutions to overcome these challenges. The interactive nature of FGD enables participants to question assumptions, engage in constructive debates, and brainstorm ideas collectively, thereby enhancing their ability to make informed decisions regarding medicinal plant management.

FGD provides a platform for knowledge dissemination and awareness building (Choudhury et al., 2021). Participants could learn about the latest research findings, innovations, and emerging trends in medicinal plant management. Experts and researchers can share evidence-based information, best practices, and guidelines for improving the sustainability and effectiveness of medicinal plant management. This knowledge transfer empowers participants with up-to-date and relevant information, enabling them to make informed decisions and adopt new approaches in their own practice.

FGD creates a supportive and collaborative environment that encourages active engagement and participation. The participants felt valued and respected for their contributions, leading to increased motivation and commitment to learning. This participatory approach promotes a sense of ownership and empowerment among participants, fostering long-term behavior change and the adoption of sustainable practices in managing medicinal plants.

FGD is an effective method for improving knowledge and understanding of the management of medicinal plants owing to its participatory, collaborative, and interactive nature. Through active engagement, peer learning, critical thinking, and knowledge dissemination, FGD facilitates a comprehensive understanding of medicinal plant management practices. By harnessing participants' collective wisdom and experiences, FGD contributes to developing effective strategies for the sustainable and responsible use of medicinal plants.

The findings of this study suggest that education using the focus group discussion method is an effective intervention to improve respondents' knowledge of the management of medicinal plants in their families. Furthermore, the education provided will instill an understanding among respondents about the importance of improving their quality of life. In this study, some respondents also suggested that the management of *Clitoria ternatea* and *Psidium guajava* L, processed into herbal tea sachets, could become a future program for the women farmers group.

#### 4. Conclusions and Suggestions

Focus group discussion education can enhance the knowledge of managing *Clitoria ternatea* and *Psidium guajava* L among the women farmers

group in Srimartani Village, Piyungan, Bantul, Yogyakarta, Indonesia. Moreover, the test for differences revealed a significant influence of focus group discussion education on the knowledge of managing *Clitoria ternatea* and *Psidium guajava* in Srimartani Village, Piyungan, Bantul, Yogyakarta, Indonesia. This study serves as a valuable source for information and literature review in community nursing and complementary and alternative nursing, specifically focusing on the management of *Clitoria ternatea* and *Psidium guajava* L using FGD education. In Srimartani Village, education on medicinal plant-based treatments cultivated by families or the community is recommended to enhance community knowledge and explore alternative therapies. Continuous support is required for the management of traditional medicinal plants to maximize their utilization. Future researchers are encouraged to further investigate the processing of *Clitoria ternatea* and *Psidium guajava* L into herbal tea preparations and explore FGD education for diverse community groups, including children, adolescents, adults, and the elderly.

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