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The Role of Counseling on the Utilization of Family Medicinal Plants as Traditional Herbal Remedies on the Knowledge Level of the Community in Datarajan Village

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Knowledge; Counseling; Family Medicinal Plants (TOGA)

Abstract

The use of medicinal plants as traditional remedies offers synergistic effects, in which combinations of several plant species can enhance treatment effectiveness. Indonesia possesses the second-largest biodiversity in the world, with approximately 25,000–30,000 plant species, of which around 7,500 have been identified as having medicinal potential; however, only approximately 1,200 species are utilized as traditional medicines. This study aimed to determine the level of community knowledge and examine the effect of counseling on knowledge regarding the utilization of Tanaman Obat Keluarga (TOGA) as traditional herbal remedies. The study employed a quasi-experimental method with a non-equivalent control group design. The results showed that among 120 respondents in the intervention group, the majority demonstrated a good level of knowledge, with 71 respondents (59%) categorized as having good knowledge. The Mann–Whitney test results indicated a p-value of 0.000, demonstrating a significant difference between groups. This study concluded that community knowledge was categorized as good and that counseling had a significant effect on the knowledge level of the community in Datarajan Village, Ulu Belu District, Tanggamus Regency, regarding the utilization of Tanaman Obat Keluarga (TOGA) as traditional herbal remedies.

INTRODUCTION

Indonesia possesses the second-largest natural wealth in the world (Setiawan, 2022), with approximately 30,000 plant species distributed throughout the Indonesian archipelago (Hakim, 2015). Based on research by Elisma et al. (2020), Indonesia has approximately 25,000–30,000 plant species, representing around 80% of the world's plant diversity and 90% of Asia's plant diversity. Of these species, approximately 7,500 have been identified as having medicinal potential; however, only around 1,200 species are utilized as traditional medicines (Well, 2021).

Medicinal plants grow widely on community land, home gardens, and forests and can be utilized for various purposes, including clothing, food, health maintenance, and treatment. The use of plants for disease treatment has long been practiced among rural communities, resulting in the development of traditional healing practices, the widespread use of traditional medicines, and the cultivation of medicinal plants in residential areas (Harefa, 2020).

Tanaman Obat Keluarga (TOGA) can be utilized as traditional herbal remedies through various processing methods to obtain their therapeutic benefits. Therefore, communities need to understand the benefits of each type of family medicinal plant and the proper methods for processing them (Susanto, 2017). The utilization of medicinal plants as traditional preparations offers advantages, including synergistic effects, in which combinations of appropriate medicinal plants can enhance treatment effectiveness. This occurs because the active compounds contained in different medicinal plants may complement and support each other (Kariman et al., 2014).

Community knowledge passed down through generations regarding the utilization of family medicinal plants as traditional herbal remedies includes disease prevention, health maintenance, recovery, and treatment. This practice is supported by the World Health Organization (WHO), which encourages healthy lifestyles through natural approaches, including the consumption of plant-based foods that provide beneficial nutrients and reduce exposure to artificial preservatives or potentially harmful chemicals (Zhahera et al., 2023).

Counseling involves educational activities delivered to groups of people using supporting media to provide information and improve knowledge (Nurmala, 2018). This statement is supported by Syamson et al. (2019), who found that counseling influenced increased community knowledge regarding TOGA utilization. Similarly, Zahrah et al. (2020) reported differences in knowledge levels before and after counseling regarding the benefits of natural materials as traditional medicines, while Sagai et al. (2021) found that family medicinal plant counseling contributed to increased community knowledge. This study addressed these research gaps by applying a stronger research design and conducting a more comprehensive analysis.

The novelty of this study lies in the application of a quasi-experimental design using a non-equivalent control group design, which enables a more accurate comparison between intervention and control groups. This approach remains limited in previous studies on similar topics. Furthermore, this study comprehensively analyzed respondent characteristics, including gender, age, education, and occupation, and examined their relationship with knowledge levels to provide a broader understanding of factors influencing the effectiveness of counseling. In addition, this study utilized booklet media as a structured counseling instrument containing information on the definition of TOGA, examples of medicinal plants, selection of quality plants, processing methods and stages, and the safety aspects of traditional herbal remedies compared with modern medicines. This approach contributes to addressing the limited empirical evidence regarding the effectiveness of TOGA counseling for rural public health promotion in Lampung through rigorous quantitative methods.

Based on the above description, this study was conducted under the title "The Role of Counseling on the Utilization of Family Medicinal Plants as Traditional Herbal Remedies on the Knowledge Level of the Community in Datarajan Village, Ulu Belu, Tanggamus." This study aimed to determine community knowledge levels regarding the utilization of Tanaman Obat Keluarga (TOGA) as traditional herbal remedies and examine the effect of counseling on improving community knowledge in Datarajan Village, Ulu Belu District, Tanggamus Regency. This research is expected to provide theoretical contributions by enriching studies in public health and health promotion, particularly regarding the effectiveness of counseling-based health education interventions. Practically, the findings are expected to serve as input for

health workers, health cadres, and village governments in designing more effective and targeted TOGA counseling programs. Furthermore, the results may support the development of local policies regarding the utilization of home gardens for family medicinal plant cultivation to promote community health independence at the village level.

METHOD

This study used a quantitative analytical approach with a quasi-experimental method using a non-equivalent control group design. Data were collected through the distribution of pre-test and post-test questionnaires to respondents.

Tools and Materials

Tools used included online questionnaires, a laptop, a mobile phone for documentation evidence, and the Zoom Meeting application. Materials used included content in the form of a booklet covering the definition of TOGA, plant examples, selecting good quality plants, processing methods, equipment requirements, stages of processing TOGA, and the safety of traditional herbal remedies compared to modern/chemical medicine.

Research Procedure

Respondents received treatment through counseling. Hypothesis analysis for paired sample difference testing used the dependent t-test statistical test, but if the data were not normally distributed, it was tested using the Mann-Whitney test, which functions to analyze differences in knowledge levels. A p-value <0.05 indicates that the hypothesis is accepted.

RESULTS AND DISCUSSION

Research Respondent Characteristics

Respondent characteristics in this study included gender, age, last education, and occupation. A more detailed description can be seen in Table 1 below:

Table 1. Respondent Characteristics

Respondent Characteristics	Number	Percentage (%)
Gender		
Male	72	30
Female	169	70
Total	**120**	**100%**
Age		
19-44 years	137	57
45-59 years	75	31
≥60 years	29	12
Total	**120**	**100%**
Last Education		
Elementary School (SD)	28	12
Junior High School	56	23
Senior High School	112	46
Bachelor's Degree	31	13
Diploma	5	2
No Schooling	9	4
Total	**120**	**100%**
Occupation		
Farmer	32	13

Respondent Characteristics	Number	Percentage (%)
Farmer & Housewife	2	1
Civil Servant	8	3
Teacher	8	3
Private Employee	16	7
Entrepreneur	34	14
Housewife	72	30
Student	5	2
Other	64	27
Total	**120**	**100%**

Source: Primary Data Processed, 2024

Females were dominantly more active in participating in tasks requiring focus, such as listening to counseling and filling out the provided questionnaires Jannah et al (2021). Gender is a factor widely discussed in studies on the distribution of traditional knowledge, and in many cases, women know more about medicinal and food plants than men (Bruschi et al., 2011). Knowledge levels can be influenced by age and education. Adulthood in the range of 19-44 years is a period of achieving stability in dealing with various problems encountered (Perkasa, 2020). This aligns with research by Zahrah et al (2020) which found that with increasing age, thinking abilities become more mature and quicker at capturing external information, thus the knowledge received becomes broader and better; respondents are active and can focus on filling out questionnaires or listening during counseling activities. Most of the community had Senior High School (SMA) education. This knowledge must be preserved and the cultural heritage of ancestors developed through formal education (Fahira et al., 2023).

Level of Knowledge on the Utilization of Family Medicinal Plants (TOGA) as Traditional Herbal Remedies

Based on **Figure 1**, it is shown that out of 120 respondents in the treatment group, the highest number of respondents in the knowledge category was in the good knowledge category, namely 71 respondents (59%). Based on the pre-test results, the counseling activity was an appropriate step to increase respondents' knowledge

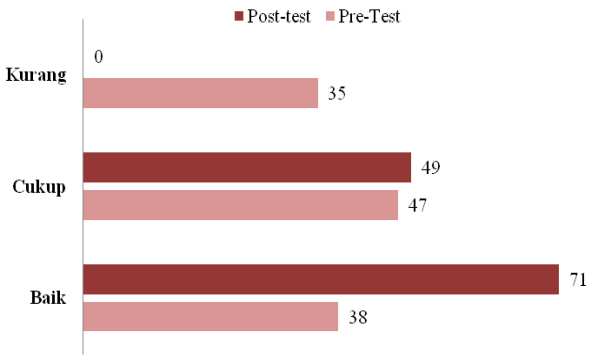

Figure 1. Knowledge Level of the Treatment Group
Source: Data taken by researchers in 2024

The counseling activity was held on Wednesday, February 28, 2024, at the Datarajan Village Hall, Ulu Belu District, Tanggamus Regency, with Mrs. Diah Kartika Putri, M. Farm, as the resource person on the utilization of TOGA. This was done to determine the difference

in knowledge levels by filling out pre-test questionnaires (before counseling) and post-test questionnaires (after counseling).

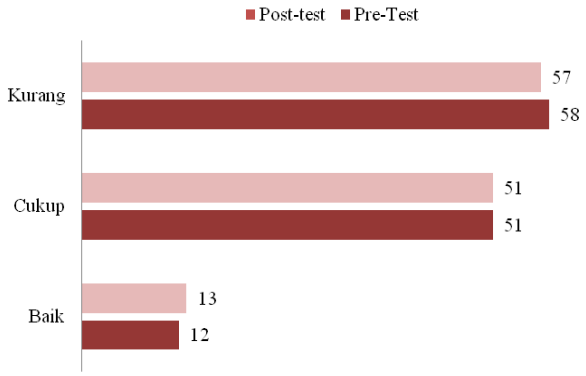

Figure 2. Knowledge Level of the Control Group
Source: Data taken by researchers in 2024

Table 2. Distribution of Respondents' Correct Answers

Question	n(%)
Do you know about TOGA (family medicinal plants)?	106 (88.3)
Can you explain how to process TOGA (medicinal plants) into traditional medicine?	88 (73.3)
Do you know that the uses of cat's whiskers, hibiscus, and meniran are for fever reducers?	109 (90.8)
Do you know that TOGA (medicinal plants), besides being in home yards, are also commonly found on the roadside?	111 (92.5)
Do you know that the uses of ginger, lime, garlic, shallot, and bilimbi are for cough medicine?	107 (89.2)
Can you explain what is meant by TOGA (medicinal plants) that can be planted in home yards for medicine?	105 (87.5)
Have you ever known that someone can use guava leaves to treat diarrhea?	100 (83.3)
In your opinion, is consuming chemical medicine when sick safer than TOGA (medicinal plants)?	82 (68.3)

Source: Primary Data Processed, 2024

Regardless of the media used, the essence that must be understood in the learning process is the dialogue between the material presenter and the listeners. The material presentation can be clearly seen by utilizing the share screen facility; live broadcast videos have good quality, are clear with distinct sound (Wena, 2020).

Based on **Table 2**, it is known that respondents had good knowledge regarding the existence of medicinal plants, namely that besides home yards, they can also be found on the roadside. However, respondents still lacked understanding that medicinal plants are safer than chemical medicines because they have fewer side effects. Natural products contain fewer heavy metals and have higher molecular rigidity compared to synthetic chemicals (Chaachouay and Zidane, 2024). The pharmacology of the main chemical groups in plants used as family medicinal plants is based on phytochemical studies. Nutrients such as vitamins, minerals, etc., are largely responsible for the pharmacological activity of plants (Chaughule and Barve, 2024)

The Influence of Counseling on the Level of TOGA Knowledge

The following table presents the results of the difference test for pre-test and post-test knowledge:

Table 3. Difference Test for Knowledge Level

Test Statistics		
Z	-13.448	Wilcoxon Test
Asymp. Sig. (2-tailed)	0.000	

Source: Primary Data Processed, 2024

Table 4. Test of the Influence of Counseling on Knowledge Level

Test Statistics		
Z	-10.329	Mann-Whitney Test
Asymp. Sig. (2-tailed)	0.000	

Source: Primary Data Processed, 2024

Based on **Table 3** and **Table 4**, it is shown that the p-value is 0.000 (<0.05), so it can be said that there is a difference in knowledge increase between before and after counseling, and there is an influence of counseling on knowledge. Counseling can also change individuals' mindset and ability to behave. Respondents' good behavior in listening to the material was able to increase their knowledge after counseling.

In line with research by Hikmawanti et al (2021), the community gained knowledge and skills regarding various types of medicinal plants and how to utilize and process traditional plants, as seen from the participants' explanations at the end of the activity. The results of the counseling activity are expected to motivate the target community to utilize remaining land around their homes to plant medicinal plants and use them for herbal treatment of minor health complaints in the family.

Socialization is an effective way to increase public literacy regarding the utilization of herbal medicine products (Mildawati et al., 2023). The community can increase knowledge in utilizing Family Medicinal Plants (TOGA) as traditional medicine and can manage land or yards by utilizing them to plant Family Medicinal Plants (TOGA) as has been socialized (Hidayati et al., 2023).

CONCLUSION

This study concluded that the community's knowledge level regarding Tanaman Obat Keluarga (TOGA) was categorized as good, and counseling had a significant effect on improving community knowledge regarding the utilization of Tanaman Obat Keluarga (TOGA) in Datarajan Village, Ulu Belu District, Tanggamus Regency. Based on these findings, several recommendations can be proposed. The community is encouraged to utilize home yards for cultivating Tanaman Obat Keluarga (TOGA) as an effort to support family health independence and apply the knowledge gained regarding the processing and utilization of medicinal plants. Health workers and cadres are recommended to conduct continuous and periodic counseling using more varied methods, such as practical demonstrations of TOGA processing, to maintain and improve community knowledge and skills. Village governments and related institutions are advised to integrate TOGA utilization programs into village health

initiatives, provide access to medicinal plant seedlings, and establish community groups focused on TOGA as platforms for education and knowledge exchange. Future researchers are encouraged to examine community behaviors and practices related to TOGA utilization beyond knowledge levels, while also expanding the research scope and sample size to obtain broader and more representative findings.

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