

Study of Pekalongan Public Knowledge Level Regarding the Use of Turmeric Rhizome (*Curcuma domestica* Val.) Herbal Medicine as an Alternative to Traditional Anti-Inflammatory Treatment

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ABSTRACT

Background & Objective: Herbal medicine is still widely used in Indonesia as an alternative to traditional medicine. One commonly used herbal plant is turmeric rhizome (*Curcuma domestica* Val), which is known to have anti-inflammatory activity. However, the use of herbal medicine is often not accompanied by adequate knowledge regarding its benefits, dosage, and proper use. This study aims to determine the level of knowledge among the people of Pekalongan regarding the use of turmeric rhizome as an alternative traditional anti-inflammatory treatment. **Method:** This research is a descriptive survey method using a closed-ended questionnaire that has been tested for validity and reliability. The number of respondents in this study was 50 people. **Result:** The research results showed that 22 respondents (44%) had good knowledge, 15 respondents (30%) had fair knowledge, and 13 respondents (26%) had poor knowledge. These results indicate that the majority of the public has a good understanding of the use of turmeric as a traditional anti-inflammatory medicine. Increased education is still needed to minimize misuse of herbal medicines in the community. **Conclusion:** The level of knowledge of the Pekalongan community regarding the use of turmeric rhizomes (*Curcuma domestica* Val) as an alternative traditional anti-inflammatory treatment is considered quite good. The majority of respondents (44%) were in the good knowledge category, but there were still respondents with sufficient knowledge (30%) and less (26%).

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Introduction

Indonesia is a country with abundant natural resources, one of which is herbal plants, which have the potential to be used as traditional medicines. The use of herbal plants has become part of the local culture to maintain health and treat various ailments. Herbal remedies are considered more affordable and readily available than modern medicine. People in various regions still use medicinal plants as an alternative treatment (Damanti, 2021).

According to the Food and Drug Monitoring Agency (BPOM, 2019), herbal medicines are preparations derived from natural ingredients, primarily plants, used for medicinal purposes and whose safety and efficacy have been empirically proven. BPOM also divides herbal medicines in Indonesia into three categories: jamu (herbal medicine), standardized herbal medicines (OHT), and phytopharmaceuticals, based on the level of scientific evidence and clinical trials.

Many people use herbal remedies without fully understanding how to use them properly. Many still ignore the recommended consumption times or dosages, even though improper use can cause side effects and even poisoning, even if the ingredients are natural. Therefore, it is crucial for the public to receive education on how to choose, use, and utilize herbal remedies wisely (Sintia et al. 2024)

Turmeric (*Curcuma domestica* Val) is a herbal plant frequently used in traditional medicine. Turmeric rhizomes contain the active compound curcumin, known to have anti-inflammatory, antioxidant, and antimicrobial properties. Curcumin works by inhibiting the cyclooxygenase (COX) enzyme, which plays a role in the inflammatory process. These properties make turmeric an alternative traditional treatment for inflammation. (Kurnia, 2020).

Turmeric (*Curcuma domestica* Val.) is known to have potent anti-inflammatory properties. This effect occurs because the curcumin it contains works through various mechanisms within the arachidonic acid system. This active substance can inhibit various molecules that play a role in the inflammatory process in the body (Turmeric or *Curcuma longa* Linn., 2019).

Turmeric contains various active compounds, with the main chemical component being curcuminoids, a group of natural dyes found in 2.5–6% of the total rhizome content. Curcumin pigments are the compounds that give turmeric rhizomes their distinctive yellow-orange color (Winarto, 2004). One of the main fractions of this curcuminoid group is curcumin, which has various biological activities important for health.

Objective

This study aims to determine the level of knowledge of the Pekalongan community regarding the use of turmeric rhizomes as an alternative traditional anti-inflammatory treatment.

Method

This study used a descriptive method with a survey approach to determine the level of public knowledge regarding the use of turmeric rhizomes as an anti-

inflammatory herbal remedy. Data collection was conducted by distributing questionnaires to respondents who met the study criteria.

The research instrument was a closed-ended questionnaire that was tested for validity and reliability before use. The validity test results showed that all questionnaire items were valid, with a calculated r value greater than the table r value and a significance value less than 0.05. The reliability test showed a Cronbach's Alpha value of 0.749, indicating that the research instrument had a good level of internal consistency.

The number of respondents in this study was 50 people. The data obtained was then processed using a scoring method to group respondents' knowledge levels into three categories: good (76–100%), sufficient (56–75%), and insufficient (<55%). The results of the data processing are presented in the form of frequency distribution tables and percentages.

Results

This study was conducted to determine the level of knowledge among the people of Pekalongan regarding the use of turmeric rhizomes (*Curcuma domestica* Val) as an alternative traditional medicine with anti-inflammatory effects. Turmeric is one of the herbal plants that has long been used for generations in Indonesian society. However, this use is not always accompanied by a proper understanding of its benefits, methods of use, and potential risks. This study is important for illustrating the extent of the community's knowledge regarding turmeric as a traditional medicine. Research data were obtained through the distribution of questionnaires to respondents who met the criteria.

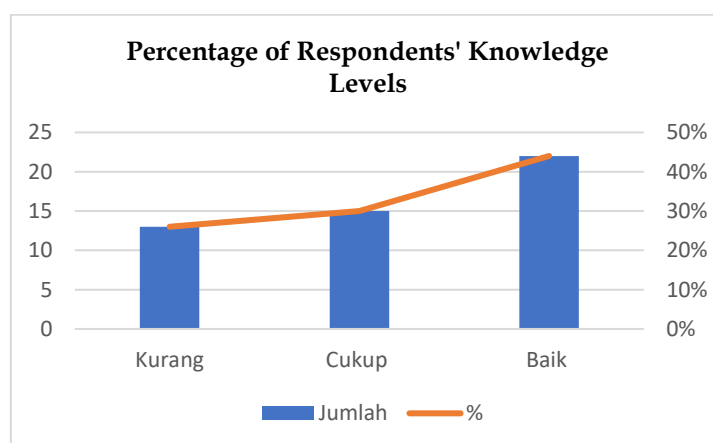
Respondent characteristics provide an overview of the background of the individuals participating in this study. The aspects examined include gender, age, educational level, and occupation. This information is necessary to assess the social and demographic conditions that may influence an individual's level of knowledge. Since each respondent's background differs, this can lead to variations in knowledge. Respondent characteristics play a crucial role in supporting the discussion of the research findings.

TABLE 1. Respondent characteristics

Variable	N	%
<i>Age</i>		
<20 year	21	42.00
21-30 year	27	54.00
31-40 year	1	2.00
41-50 year	1	2.00
<i>Gender</i>		
Male	14	28.00
Female	36	72.00
<i>Education</i>		
Elementary School	0	0.00
Middle School	3	6.00
High School	33	66.00
Diploma	8	16.00
Bachelor's Degree	6	12.00

The characteristics of the respondents based on education, gender, and age indicate a variety of backgrounds that may influence the level of knowledge in this study. The diverse educational levels of the respondents reflect differences in their ability to receive and understand health information, particularly regarding the use of herbal medicines. Gender differences provide insight into variations in health awareness and the use of medicinal plants in daily life. The age range of respondents, dominated by younger to working-age groups, indicates the potential for broader access to information through digital media and social environments. Older age groups tend to rely on personal experience as a source of information regarding the use of traditional medicine. These conditions demonstrate that educational background, gender, and age play a role in shaping the public's level of knowledge regarding the use of turmeric rhizome as an alternative traditional treatment.

Based on the results of this study, data was obtained regarding the level of knowledge among the residents of Pekalongan City about turmeric rhizome as an anti-inflammatory herbal medicine. The following data is shown in the diagram below:



Respondents with a good level of knowledge generally understand the benefits of turmeric as an anti-inflammatory agent, recognize turmeric as a medicinal plant, and are aware of its primary active compound, curcumin, which plays a role in providing anti-inflammatory and antioxidant effects for health. This indicates that a portion of the public already possesses a sufficient basic understanding of the scientific use of turmeric, which has the potential to support the rational use of traditional medicine. Respondents with adequate knowledge generally know the general benefits of turmeric, but their understanding of proper usage remains limited. Hesitation in answering more specific questions, such as dosage or risks associated with overuse, is still observed in this group. Respondents with low knowledge levels demonstrate limited understanding of turmeric's benefits and its active compounds, including potential side effects such as stomach upset when used excessively. This low level of knowledge may be influenced by limited access to health information and a lack of interest in seeking information about traditional medicine; therefore, more intensive educational efforts are needed to improve public understanding.

The variation in the public's level of knowledge in this study indicates a need for more targeted health information. Delivering information through easily accessible media can be one approach to improving public understanding. The role of healthcare

workers in providing education regarding the use of herbal medicines is also necessary. It is hoped that the information provided will help the public understand the benefits and potential risks of using turmeric. Increased knowledge can encourage the wiser use of traditional medicine. The proper use of turmeric is expected to provide optimal health benefits for the community.

Discussion

Knowledge of the benefits of turmeric indicates that most respondents were aware that turmeric can be used as a traditional medicine with anti-inflammatory properties. Respondents were able to recognize turmeric as a medicinal plant and were aware of the presence of active compounds such as curcumin, which are beneficial for health. These findings indicate that the community already has a basic understanding of the use of turmeric as an alternative traditional medicine. The results of this study align with research conducted by (Hasma 2020), which stated that most respondents had sufficient knowledge (88.2%) regarding the use of turmeric as an anti-inflammatory drug in Biringere, Pangkep Regency.

The method of using turmeric indicates that respondents were familiar with general turmeric processing methods before using it as a traditional medicine. Some respondents still lacked a clear understanding of the safe dosage and frequency of turmeric use. This situation suggests that public knowledge is still limited to empirical use based on experience passed down through generations. The results of this study support research conducted by (Yuliana, et al 2021), which showed that the majority of the public has good knowledge of the use of herbal medicines, although understanding of proper use still needs to be improved.

Based on the overall research results, the public's level of knowledge regarding the use of turmeric rhizomes as traditional medicine ranges from fair to good. This level of knowledge can be influenced by several factors, such as education level, access to information, and experience using traditional medicine. These results align with those of (Yuliana et al. 2021), who found that public knowledge regarding the use of herbal medicines is influenced by exposure to health information obtained from various sources.

Research strengths: This study specifically addresses the level of public knowledge regarding the use of turmeric rhizomes as a traditional medicine, making the focus more specific than previous studies that discussed herbal medicine in general. This specific focus allows for a more in-depth understanding of the public's understanding of a particular medicinal plant.

Research weaknesses: The descriptive research design is only able to describe the level of knowledge without analyzing the causal relationship between variables. Therefore, this study cannot explain the factors that significantly influence the level of public knowledge.

Conclusion

The level of knowledge of the Pekalongan community regarding the use of turmeric rhizome (*Curcuma domestica* Val) as an alternative traditional anti-inflammatory treatment is mostly in the good category (44%). The knowledge category is fair (30%), and the knowledge category is poor (26%). The study results

indicate that the community already understands the benefits of turmeric as a traditional medicine, but further education is needed to ensure the appropriate and safe use of herbal medicines.

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