

The relationship between knowledge levels and the use of soursop leaf tea among housewives with hypertension in the village of suku Sara Tangke

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ARTICLE INFO

Article history:

Received Jun 1, 2026

Revised Jun 9, 2026

Accepted Jun 25, 2026

Keywords:

Knowledge
Soursop Leaf Tea
Utilization

ABSTRACT

Hypertension remains a major global health problem due to its increasing prevalence and risk of serious complications. In addition to pharmacological treatment, health promotion efforts are needed to improve community awareness and encourage the use of safe complementary therapies. Soursop leaf tea (*Annona muricata* L.) has been widely recognized as a traditional herbal remedy; however, evidence regarding the effectiveness of educational interventions in promoting its utilization among hypertensive individuals remains limited. This study aimed to evaluate changes in knowledge and utilization of soursop leaf tea among hypertensive housewives in Suku Sara Tangke Village following a health education intervention. A one-group pretest-posttest pre-experimental design was employed from June to November 2025. A total of 46 respondents were selected through purposive sampling. Data were collected using a structured questionnaire and analyzed using the Wilcoxon signed-rank test. The findings demonstrated significant improvements in respondents' knowledge and utilization of soursop leaf tea after the educational intervention. The obtained p-value of 0.000 ($p < 0.05$) indicates that the intervention was not only statistically significant but also practically meaningful in encouraging positive behavioral changes toward the adoption of herbal-based complementary therapy for hypertension management. The novelty of this study lies in integrating community-based health education with local herbal resources, highlighting the potential of soursop leaf tea utilization as a culturally relevant health promotion strategy among hypertensive housewives. These findings suggest that educational approaches can effectively support the acceptance and utilization of traditional herbal therapies within community health promotion programs.

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INTRODUCTION

Hypertension is a noncommunicable disease that poses a global health burden and continues to show an upward trend year after year. In 2022, the World Health Organization (WHO) reported that approximately 1.28 billion adults aged 30–79 worldwide had hypertension, and two-thirds of them lived in low- and middle-income countries (WHO, 2023). This figure continues to rise, leading the WHO to publish the Global Report on Hypertension in 2023, which confirms that hypertension is a major contributor to cardiovascular disease, stroke, and premature death, and is projected to continue increasing if not addressed comprehensively (WHO, 2023). The latest data update for 2024 shows that the number of adults with hypertension has reached 1.4 billion, representing 33% of the global adult population (Hendriani et al., 2025).

In Indonesia, the rising trend in hypertension cases is also reflected in national surveillance data. The 2022 Basic Health Research (Riskesdas) reported a prevalence of hypertension among adults aged 18 and older, based on blood pressure measurements, of 34.1%, an increase compared to the 2018 Riskesdas (Setianingsih et al., 2025). Furthermore, according to the 2023 Indonesian Health Survey (SKI), the prevalence of hypertension among adults aged 18 years and older, as determined by blood pressure measurements, was 30.8%, with a significant disparity between prevalence based on physician diagnosis (5.9%) and blood pressure measurements (26%) in the 18–59 age group (Rais et al., 2025). This gap indicates that there are still a high number of cases of hypertension that remain undiagnosed and have not received optimal treatment in the community (Torus et al., 2026). At the regional level, data from the 2024 Aceh Health Profile indicate that the prevalence of hypertension based on a doctor's diagnosis among residents aged 18 and older in Aceh Province is 8.5%, while the prevalence based on blood pressure measurements reaches 22.6%. Specifically, Bener Meriah Regency ranks first in Aceh Province with the highest prevalence of hypertension at 36.75% (Syahputri et al., 2025).

Data from the Bener Meriah District Health Office shows an upward trend in the number of hypertension cases receiving standard-of-care treatment for three consecutive years. In 2022, 5,806 people with hypertension (14.5%) received standard-of-care treatment, comprising 2,141 men (10.5%) and 3,665 women (18.6%). This figure increased in 2023 to 6,417 patients (58.3%), comprising 2,695 men (48.1%) and 3,722 women (68.7%). Furthermore, in 2024, 7,926 patients (64.1%) received standard care, comprising 2,638 men (42.4%) and 5,288 women (86.2%) (Dinkes Bener Meriah, 2024). The increase in service coverage from 14.5% in 2022 to 64.1% in 2024 reflects increasingly intensive efforts at detection and treatment, while also indicating the significant burden of hypertension cases in this district. At the health facility level, data on the Noncommunicable Diseases (NCD) indicators at the Buntul Kemumu Community Health Center in Bener Meriah Regency also reflect a consistent increase in cases. A total of 392 cases were recorded in 2022, rising to 418 cases in 2023, and then increasing significantly to 610 cases in 2024. Over the past three years, the highest number of hypertension cases has consistently been found in the village of suku sara tangke (Puskesmas Buntul Kemumu, 2024).

Several previous studies have demonstrated the effectiveness of soursop leaves as a complementary therapy for hypertension. In their 2023 study conducted in Sukawangi Village, Cianjur Regency, Sulistiyowati and Kusuma Ningrum employed a quasi-experimental design involving elderly individuals with hypertension and found that a soursop leaf decoction was able to lower systolic blood pressure by 9.92 mmHg and diastolic blood pressure by 3.55 mmHg (Sulistiyowati & Kusumaningrum, 2023). Furthermore, according to Yani (2023), a cross-sectional study conducted in Halong Subdistrict with 70 respondents showed that soursop leaves are the herbal plant most commonly used by the community to treat hypertension, with knowledge and affordability being the primary determinants of their choice (Yani et al., 2024). A study by Putri (2025) found a significant association between housewives' knowledge and behavior regarding the use of herbal medicines ($p=0.015$; $r=0.211$), confirming that the level of knowledge plays a significant role in families' decisions regarding the selection of herbal therapies (Putri et al., 2025).

The use of soursop leaf tea as a complementary therapy for people with hypertension is strongly influenced by an individual's level of knowledge, particularly among homemakers, who play a central role in determining the family's treatment choices (Faidh, 2024). Housewives are typically the primary decision-makers when it comes to managing the health of family members, including when choosing herbal remedies or traditional medicines (Qamariah et al., 2019). Although several studies have demonstrated the benefits of soursop leaves and the link between knowledge and herbal use, to date there has been no study specifically examining the relationship between the knowledge of housewives with hypertension and the use of soursop leaf tea in the Suku sara tangke village in Bener Beriah Regency. Based on the above discussion, this study aims to determine the relationship between the knowledge of homemakers with hypertension and their use of sirsak leaf tea among the suku sara tangke in bener meriah regency in 2025.

RESEARCH METHOD

This study is a quantitative study with a pre-experimental design. The research design used is a one-group pretest-posttest design, which involves conducting a single measurement beforehand (*pretest*) before the treatment is administered, followed by another measurement afterward (*posttest*). The advantage of this *one-group pretest-posttest design* is that we can compare the participants' scores before and after the treatment (Akbar, 2022). The research design is as follows:

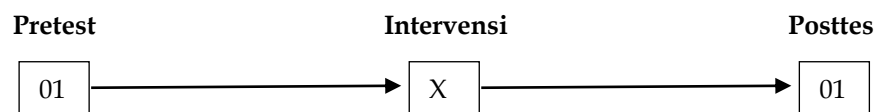


Figure 1. Levels of knowledge and utilization before and after education through leaflets

The study was conducted in Suku Sara Tangke Village, Bener Meriah Regency, from June to November 2025. The population consisted of 87 housewives with hypertension residing in the study area. The sample size was determined using the Slovin formula with a margin of error of 10%, resulting in a minimum sample of 46 respondents. Respondents were selected using purposive sampling based on predetermined inclusion and exclusion criteria.

The inclusion criteria were: (1) housewives with hypertension residing in Suku Sara Tangke Village, (2) aged 18 years or older, (3) willing to participate and provide informed consent, (4) able to communicate effectively and complete the questionnaire, and (5) not experiencing physical or mental conditions that could interfere with participation in the study.

The exclusion criteria were: (1) respondents who were absent during the pretest or posttest, (2) respondents who withdrew from the study before its completion, and (3) respondents who provided incomplete questionnaire responses. The research instrument was a structured questionnaire, and data were analyzed using the Wilcoxon signed-rank test (Notoatmodjo, 2018).

RESULTS AND DISCUSSIONS

Characteristics

The characteristics of the respondents in this study include age, highest level of education, and occupation. An analysis of respondent characteristics was conducted to describe the profile of the respondents involved in the study. The frequency distribution of respondent characteristics is presented in Table 1.

Tabel 1. Characteristics of respondents before and after receiving education via leaflets

Characteristics	Frequency	Presentation
Age		
<=30 years	10	21.7

Characteristics	Frequency	Presentation
31–60 years	24	60.9
> 60 years	14	30.4
Highest Level of Education		
Elementary School	19	41.3
Middle School	7	15.2
High School	16	34.8
College	4	8.7
Occupation		
Homemaker	32	69.6
Private-sector employee	10	21.7
Civil servant	4	8.7

Based on Table 1 regarding the frequency distribution of respondent characteristics, it is evident that in terms of age, the majority of respondents were in the 31–60 age group, totaling 24 people (60.9%), followed by the >60 age group with 14 people (30.4%), and the ≤30 age group with 10 people (21.7%). In terms of highest level of education, the largest group of respondents had an elementary school education, totaling 19 people (41.3%), followed by high school with 16 people (34.8%), junior high school with 7 people (15.2%), and college with 4 people (8.7%), indicating that the respondents' educational levels are still dominated by basic education. Meanwhile, in terms of employment status, the majority of respondents were homemakers, totaling 32 people (69.6%), followed by 10 private-sector workers (21.7%), and 4 civil servants (8.7%). Thus, it can be concluded that the respondents in this study were predominantly housewives with a primary education background, ranging in age from working-age adults to the elderly (Pranata et al., 2024).

Univariate Analysis

Univariate analysis was conducted to describe the frequency distribution of each variable under study. The variables analyzed included the level of knowledge and utilization of soursop leaf tea among housewives with hypertension before and after receiving education via leaflets. The results of the univariate analysis are presented in Tables 2 and 3.

Table 2. Frequency distribution of respondents' knowledge levels before and after education via leaflets

No	Interval	Category	Pretest Score		Posttest Score	
			F	%	F	%
1	76-100	Good	8	17.4	26	56.5
2	60-75	Fair	12	26.1	16	34.8
3	0-59	Poor	26	56.5	4	8.7

Based on Table 2 regarding the frequency distribution of respondents' knowledge levels before and after receiving education via leaflets, it was found that on the pretest, the majority of respondents had a low level of knowledge (score 0–59), totaling 26 people (56.5%), followed by the adequate category (score 60–75) with 12 people (26.1%), and the good category (scores 76–100) with 8 people (17.4%). After receiving education via leaflets, there was a significant increase in posttest scores, with the number of respondents in the good category rising to 26 (56.5%), the adequate category to 16 (34.8%), and the insufficient category dropping sharply to just 4 (8.7%). This indicates that providing education through leaflets is effective in increasing respondents' knowledge about soursop leaf tea.

Table 3. Frequency distribution of respondents' usage before and after education via leaflets

No	Interval	Category	Pretest Score		Posttest Score	
			F	%	F	%
1	51-100	Yes	14	30.4	42	91.3
2	0-50	No	32	69.6	4	8.7

Based on Table 3 regarding the frequency distribution of soursop leaf tea consumption among respondents before and after receiving education via leaflets, it was found that in the pretest, the majority of respondents had never consumed soursop leaf tea—32 people (69.6%)—while only 14 people (30.4%) had consumed it. After receiving education, there was a highly significant increase in the posttest results, where the number of respondents who had used soursop leaf tea rose sharply to 42 people (91.3%), and those who had never used it decreased to only 4 people (8.7%). These results indicate that education via leaflets successfully encouraged respondents to use soursop leaf tea as a means of managing hypertension.

Bivariate Analysis

The relationship between knowledge and use of soursop tea among housewives with hypertension in the village of Suku Sara Tangke, Permata Subdistrict, Bener Meriah Regency, in 2025 is shown in Tables 4 and 5.

Table 4. T-test/wilcoxon distribution of knowledge among housewives with hypertension in Suku Sara Tangke Village, Permata Subdistrict, Bener Meriah Regency, in 2025 (experimental group)

Variable	Mean	ΔStd.	p-value
Knowledge			
Pretest	58.26	9.985	0.000
Posttest	75.65		

The results of the Wilcoxon test on the knowledge variable showed an increase in the mean score from 58.26 on the pretest to 75.65 on the posttest, with a standard deviation of 9.985. A p-value of 0.000 ($p < 0.05$) was obtained, indicating a significant difference in the knowledge levels of housewives with hypertension before and after receiving education via leaflets. Thus, it can be concluded that education via leaflets proved effective in increasing housewives' knowledge about soursop leaf tea in Suku Sara Tangke Village, Permata Subdistrict, Bener Meriah Regency in 2025.

Health education via leaflets has been shown to significantly improve the knowledge levels of housewives with hypertension. This change aligns with Notoatmodjo's (2018) theory, which asserts that knowledge is the most fundamental domain in the formation of health behavior, and that information conveyed through the appropriate medium will accelerate a person's understanding of a new concept. Leaflets, as a print medium, have distinct advantages because they can be read repeatedly, are easy to carry, and present information concisely yet comprehensively (Notoatmodjo, 2018).

These findings are consistent with the study by Wijaya & Yuswantina (2024) published in the Journal of Holistics and Health Sciences, which involved 55 respondents with hypertension at the Leyangan Community Health Center. After receiving education via leaflets, all respondents (100%) achieved a "good" knowledge level on the posttest, with the Wilcoxon test results showing a p-value = $0.001 < 0.05$, indicating a significant difference in knowledge before and after the educational intervention. This study reinforces that leaflets, as an educational medium, have a tangible impact on improving understanding among patients with hypertension (Wijaya & Yuswantina, 2024).

Similarly, a study by Khoirin et al. published in the journal 'Aisyiyah Medika, which involved 30 respondents in Agung Jati Village, East OKU Regency, and used a quasi-experimental one-group pretest-posttest design, also found a significant increase: before receiving the leaflet and education, only 19 respondents (63.3%) fell into the "good knowledge" category, but after the intervention, this number increased drastically to 29 people (96.7%), with the Wilcoxon test results showing a significant difference between the pretest and posttest scores. These findings indicate that leaflets, when accompanied by direct educational delivery, are capable of promoting a more optimal increase in understanding (Khoirin & Juliasih, 2020).

Another supporting study is one published in the Collaborative Science Journal (2025), which found a significant effect of health education using leaflets on knowledge, with a p-value of

0.008 < 0.05, as well as Sukarsi's (2024) study in the Journal of Promotive and Preventive Medicine, which found that the average pretest knowledge score of 50.13 increased to 89.47 on the posttest, with a significance level of 0.000 < 0.05, leading to the conclusion that health education has a significant effect on knowledge levels regarding hypertension prevention. This substantial increase illustrates the importance of structured educational interventions for communities that previously had limited access to health information (Sukri et al., 2024).

In the context of this study, the significant increase in knowledge was likely also driven by the fact that the majority of respondents had limited knowledge to begin with; thus, any well-targeted intervention would have a greater impact. Additionally, the fact that housewives have more time at home allows them to review the provided leaflets, enabling them to absorb the information more effectively than other groups with time constraints.

Table 5. Wilcoxon distribution of soursop leaf tea consumption in the village of Suku Sara Tangke, Permata Subdistrict, Bener Meriah Regency, in 2025, by respondent group

Variable	Mean	ΔStd.	p-value
Utilization			
Pretest	47.83	8.592	0.000
Posttest	66.52		

The results of the Wilcoxon test on the variable of soursop leaf tea consumption showed an increase in the mean score from 47.83 on the pretest to 66.52 on the posttest, with a standard deviation of 8.592. A p-value of 0.000 ($p < 0.05$) was obtained, indicating a significant difference in the use of soursop leaf tea by housewives with hypertension before and after receiving education via leaflets. Thus, it can be concluded that education via leaflets has proven effective in encouraging the use of soursop leaf tea as a means of managing hypertension in the village of Suku Sara Tangke, Permata Subdistrict, Bener Meriah Regency, in 2025.

The increased use of soursop leaf tea following the educational intervention indicates a tangible behavioral change driven by the respondents' increased knowledge (Lolok et al., 2025). This is consistent with the Health Belief Model, which states that people are more likely to adopt certain health behaviors when they have sufficient knowledge about the benefits of those actions and hold a positive perception of their effectiveness. In other words, adequate knowledge about the benefits of soursop leaves is the primary factor motivating housewives to begin actively using them (Mutdinia et al., 2019).

The scientific basis for the use of soursop leaves in lowering blood pressure has been well-documented by various studies. Andri (2022) in the *Silampari Nursing Journal* demonstrated that consuming two glasses of soursop leaf decoction daily for seven days had a significant effect on lowering blood pressure in patients with hypertension, with statistical test results showing a p-value of 0.000 < 0.05. This study provides a strong foundation for respondents to believe that the use of soursop leaf tea is an appropriate and evidence-based practice (Andri et al., 2022).

Kurniawan & Dianto (2024) in the *Journal of Professional Nursing Research* also found that soursop leaf decoction had a significant effect on lowering blood pressure in elderly individuals with hypertension, with a p-value of 0.000 ($p < 0.05$) (Kurniawan & Dianto, 2024). Furthermore, Ningrum (2024) in the journal **Ners Muda** also demonstrated that administering a soursop leaf decoction—made by boiling 10 grams of leaves in 300 ml of water for 15 minutes—is effective in lowering blood pressure in elderly individuals with hypertension, further strengthening the rationale for using soursop leaf tea as a complementary therapy (Ningrum et al., 2024).

In addition, a study by Supriyadi (2023) in the *Journal of Nursing Care and Biomolecular* (Vol. 8, No. 1, pp. 54–62) indicates that the average systolic blood pressure before administration of soursop leaf decoction was 146.67 mmHg, decreasing to 140.13 mmHg, and diastolic pressure from 85.07 to 80.93 mmHg following the intervention among 32 participants at the Air Sugihan

Community Health Center, demonstrating the significant effect of soursop leaves in lowering blood pressure. This finding is highly relevant as scientific support for promoting the wider use of soursop leaves in rural communities (Supriyadi et al., 2023).

The factor of ease of access also plays a role in increasing the use of soursop leaf tea. A study on the relationship between knowledge and the use of herbal plants for hypertension at the POSBINDU Linggang Purwodadi health post in West Kutai showed that people with good knowledge of herbal plants are more likely to use them, given that herbal medicines have minimal side effects and are easily accessible. This aligns with the situation of respondents in the village of Suku Sara Tangke, who generally live in rural areas with relatively easy access to soursop plants. (Kasfarina et al., 2023). However, it is also important to note that soursop leaf tea should still be used wisely. Andala & Safitri (2023) in the Assyifa Journal: Lhokseumawe Health Science Journal emphasize that although knowledge regarding the use of traditional medicine among elderly individuals with hypertension has increased, monitoring by healthcare professionals remains necessary to ensure proper dosage and consumption methods, so that the use of herbal plants can provide maximum benefits without causing unwanted risks (Andala & Safitri, 2023).

CONCLUSION

Based on the research findings, education delivered through leaflets was effective in improving the knowledge and utilization of soursop leaf tea among housewives with hypertension, as demonstrated by a significant increase following the intervention ($p < 0.05$). These findings suggest that community health centers (Puskesmas) can incorporate leaflet-based health education into routine health promotion programs, such as Posbindu PTM and community outreach activities, to enhance awareness and utilization of complementary therapies for hypertension management. Future studies are recommended to employ more rigorous research designs with larger sample sizes and to examine additional factors influencing the utilization of complementary therapies, including attitudes toward herbal medicine, family support, cultural beliefs, health literacy, accessibility of herbal products, socioeconomic status, self-efficacy, and support from healthcare providers, in order to provide a more comprehensive understanding of behavioral changes related to herbal therapy use.

ACKNOWLEDGEMENTS

The author would like to thank all respondents and those who supported the conduct of this study. Special thanks are extended to the Institute for Research and Community Service (LPPM) at STIKes Payung Negeri Aceh Darussalam for providing the financial support that made this study possible.

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