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Knowledge and Attitude of Hypertension Patients towards Traditional Medicines: A Cross-sectional Study at Public Health Center, Siak, Riau

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ABSTRACT: Hypertension is a significant global concern associated with severe cardiovascular ailments, including stroke, myocardial infarction, cardiac insufficiency, and renal dysfunction. Traditional medicines (TM) represent a potential alternative treatment modality for the management of hypertension. Hence, this study aims to establish the relationship between individuals' knowledge and attitudes about using TM among hypertension patients. This observational research utilizes a descriptive-analytic approach with a cross-sectional design. Validated questionnaires were used to collect the knowledge and attitudes data of respondents. The correlation between knowledge and attitudes was analyzed with the Spearman test using SPSS version 24. A total of 102 respondents were successfully acquired using purposive non-probability sampling. The results of this study indicate a significant statistical relationship between the knowledge and attitudes of hypertensive patients regarding the utilization of TM (p-value 0.000). Furthermore, a moderate positive correlation (rs 0.493) was observed, suggesting that an improvement in knowledge is associated with a corresponding enhancement in the attitude of hypertensive patients towards TM.

Keywords: **attitude; hypertension; knowledge; traditional medicine.**

Introduction

The prevalence of hypertension is escalating within the global disease burden, with a higher prevalence observed in low- and middle-income countries (LMICs) [1]. The global prevalence of hypertension is steadily rising on an annual basis. Approximately 1.13 billion individuals worldwide are afflicted with hypertension. According to projections, the global prevalence of hypertension will impact over 1.5 billion individuals by 2025. Moreover, hypertension is often colloquially referred to as "The Silent Killer" due to the absence of noticeable symptoms in many individuals with this condition, where hypertension and its associated problems are anticipated to contribute to an annual mortality rate of around 9.4 million [2,3]. In 2017, Indonesia documented 91.3 million individuals diagnosed with hypertension, accounting for approximately 35% of the overall mortality rate [4,5].

Treatment is considered a crucial approach in addressing hypertension. In addition to modern therapy, the enduring utilization of traditional medicinal (TM) practices has contributed to the prevalence of their application in Indonesia for treating chronic ailments [6]. Most TM utilization is seen among hypertensive patients attending a health clinic in Samarinda [7]. Furthermore, according to national study statistics, a substantial proportion of individuals diagnosed with hypertension, precisely 73.63%, opt for using TM as their preferred treatment method [8]. This percentage represents the most significant rate of TM usage compared to other chronic illnesses [8]. The extensive utilization of TM has prompted the Indonesian government to establish a categorization system for TM, which distinguishes different types based on the level of evidence supporting their efficacy [9]. These categories include *jamu*, referring to herbal preparations that are solely supported by empirical evidence; *obat herbal terstandar*, or standardized herbal medicine, which encompasses herbal preparations that have undergone preclinical trials to ensure their safety; and *fitofarmaka*, or phytomedicine, which denotes herbal preparations that have undergone clinical trials to establish their efficacy [10].

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Despite the implementation of regulatory measures by the Indonesian government controlling the utilization of TM, the practice of TM remains prevalent and unrestricted outside the confines of the professional medical system [11–13]. Only 15.2% of patients consumed TM, according to the Indonesian Food and Drug Authority (Badan Pengawas Obat dan Makanan/BPOM) regulations [7]. Consequently, several people encounter adverse consequences from conventional treatment, while many patients have not achieved the desired blood pressure levels [14].

Several factors can influence people's health-seeking behavior; however, knowledge and positive attitudes are the most important [15–17]. Although most people have used TM, 59.8% have limited knowledge, and 53.7% have a negative opinion that using TM for hypertension can lead to side effects and ineffective use of TM [18]. People can effectively treat hypertension with TM if they possess the necessary knowledge and positive attitudes [19].

Siak is one of the districts in Riau, Indonesia, with the second-highest hypertension prevalence in Riau, with a higher number of societies using TM [20]. However, only limited research studies the knowledge and attitudes of hypertension patients toward TM. Given the complexities associated with managing hypertension, it is imperative to ascertain the actual clinical status of individuals in real-world settings. Thus, we examine the knowledge and attitudes of individuals with hypertension toward using TM to enhance the efficacy of TM practices in Indonesia.

Method

The present study employs observational methods and descriptive-analytical techniques to investigate a phenomenon, utilizing a cross-sectional design. The present study has obtained ethical approval from the Medical and Health Research Ethics Unit, Faculty of Medicine, Riau University, with the reference number B/095/UN19.5.1.1.8/UEPKK/2022.

Population and Sample

The participants of this study consisted of hypertension individuals who sought medical care at the Public Health Center and fulfilled the criteria for inclusion. The sampling procedure employed in this study involved using a non-probability sampling method, precisely a purposive sampling strategy wherein the selection of participants was guided by inclusion criteria.

The determination of the sample size was conducted with the Lameshow formula due to the inherent uncertainty around the population size which yielded a minimum sample size need of 96 participants. In order to account for potential dropout, an additional 10% was added to the needed sample size, resulting in a final sample size of 106.

Inclusion and Exclusion Criteria

The study's inclusion criteria encompassed hypertensive individuals willing to participate as respondents, aged 18 years or older, with practical communication skills and proficiency in reading and

Table 1. Distribution of sociodemographic data

No	Sociodemographic characteristics	Description	Number of Respondents	
			Total	Freq. (%)
1	Age	18-40	24	23,53%
		41-60	62	60,78%
		>60	16	15,69%
2	Sex	Male	35	34,31%
		Female	67	65,69%
3	Education background	Not educated	12	11,76%
		Elementary School	24	23,53%
		Junior High School	27	26,47%
		Senior High School	30	29,41%
		Bachelor	9	8,82%
4	Working status	Employed	44	43,14%
		unemployed	58	56,86%

Table 2. The results of knowledge-level data analysis

No.	Statement Category	Knowledge scores*	
		Amount	*Freq. (%)*
1	Good	38	37,25%
2	Sufficient	42	41,18%
3	Poor	22	21,57%
	Total	102	100%

*The median of knowledge score is 69,23

writing. These individuals were required to have utilized TM, either self-prepared or purchased from drug stores, to address their hypertension. Additionally, participants were expected to have employed TM as a treatment option for hypertension within the preceding three months. The exclusion criteria encompassed respondents who exhibited incomplete questionnaire responses and those who were used as health workers or presently pursuing education in the health field.

Data Collection

Data on knowledge and attitudes were collected using a validated and reliable questionnaire, which demonstrated Cronbach alpha values of 0.739 and 0.717, respectively. The questionnaires were constructed to evaluate the knowledge and attitudes of participants on the definition, dose form, and classification, as well as the advantages and disadvantages of traditional medicines. The questionnaires were given directly to respondents who voluntarily agreed to participate as respondents by filling out a consent form after having an explanation regarding the research.

Data Analysis

The categorization of knowledge and attitude levels is based on three distinct criteria. A 76% or higher score falls under the good category, while 56% to 75% is sufficient. Scores below 56% are classified as poor [21]. The data was processed using the Statistical Package for the Social Sciences (SPSS) version 24. The data analysis was conducted in two distinct stages: univariate and bivariate. Univariate analysis aims to describe sociodemographic variables, knowledge, and attitudes, generating frequency and percentage distributions. Due to the skewed data, the Spearman test was employed in conducting bivariate analysis to ascertain the link between the knowledge and attitudes of hypertension patients in utilizing TM.

Results and Discussion

A total of 106 Public Health Center respondents were found to have hypertension and use traditional medicine (TM). However, four respondents were excluded due to an incomplete questionnaire. According to this study's findings, most respondents were female (65.69%), in middle adult age (41-60 years) (60.78%), and with the highest education background was high school (29.41%). Besides that, most of the respondents were unemployed (56.86%). The characteristics of the respondents are displayed in Table 1. The findings shown in this study are consistent with other research, which indicates that individuals diagnosed with hypertension who utilize TM exhibit a higher prevalence during the middle adulthood phase, specifically between the ages of 41 and 60 [22]. The likelihood of having hypertension grows with advancing age. The observed phenomenon is attributed to the degradation of tissue elasticity, leading to arterial stiffness and thickness as a consequence of atherosclerosis [23]. Consequently, the arteries cannot expand during the cardiac pumping action that propels blood flow. The prevalence of hypertension in female patients is significantly linked to the post-menopausal stage in women, leading to arterial stiffness [24].

The findings of this study align with previous research, indicating that individuals with a high school education or equivalent constitute the majority of respondents engaging in self-medication with herbal medicines, accounting for 52 respondents (52.0%) [25]. According to Gaol and Simbolon (2022), a study found that the most significant proportion of hypertension patients, depending on their occupation, consisted of 38 respondents, accounting for 36.20% of the sample. This phenomenon can be attributed to the potential development of hypertension among those not engaged in employment, primarily due to insufficient physical activity or limited engagement in mild physical activities.

Table 3. The results of attitudes-level data analysis

No.	Statement Category	Attitude scores*	
		Amount	*Freq. (%)*
1	Good	32	31,37%
2	Sufficient	70	68,63%
3	Bad	0	0%
	Total	102	100%

*The median of attitude scores is 73,3

Knowledge is critical in shaping one's actions [26]. Some factors can influence the level of knowledge, such as education, mass media, social culture and economics, environment, experience, and age [27]. Table 2 displays the outcomes of the analysis conducted to assess the level of knowledge. Our findings suggest that the knowledge level among most hypertension patients at the Sabak Auh Community Health Center regarding the utilization of standard antihypertensive TM falls within the sufficient range. This could be due to the need for more familiarity with TM and inadequate information communication by healthcare professionals to hypertensive patients. This finding is supported by the responses provided by the participants in the initial survey question, which indicates that individuals with hypertension obtained the highest proportion of information from their families (35.29%). In contrast, only 14.71% of respondents reported receiving information from healthcare professionals. It is essential to highlight the reasons because healthcare professionals are crucial in disseminating knowledge to individuals with hypertension, enabling them to effectively manage their blood pressure at home without incurring financial costs [28].

The need for more understanding among hypertension patients regarding TM can be attributed to factors such as educational background, experiences, information sources, and the surrounding environment's influence. Education will influence the individual's learning process to obtain information. It is known that someone with a higher level of education will possess a substantial breadth of knowledge [27]. In addition, a positive correlation exists between an individual's experience level and knowledge [29].

The relationship between knowledge and the use of TM to treat hypertension is influenced by one's beliefs, habits, experience, and the benefits felt after consuming TM [30]. In addition, the impact of the surrounding living environment is worth noting, wherein many individuals resort to TM for managing their hypertension.

Attitude can be defined as an individual's cognitive, affective, and behavioral response to a stimulus or object [29]. An individual's attitude towards an object refers to their emotional inclination or bias, either in favor of or against it [31]. Various elements can impact an individual's attitude, including personal experiences, social influences, cultural influences, mass media influences, educational institutions, and emotional factors [27]. Table 3 displays the outcomes of the analysis conducted to assess the level of knowledge.

The findings of this study indicate that a significant proportion of hypertensive individuals within the working area of the Sabak Auh Community Health Center continue to exhibit a suboptimal inclination towards the utilization of TM for the management of hypertension. The absence of assistance researchers provide to hypertension patients contributes to the development of

Table 4. Bivariate analysis results

No.	Measurement Parameters	Results	Interpretation
1	Correlation strength (r_s)	0,493	Moderate
2	p-value	0,000	There is a significant relationship between hypertensive patients' knowledge and attitudes regarding the use of TM.
3	Direction of correlation	+ (Positive)	The more significant hypertensive patients' knowledge, the more positive their attitude toward traditional medicine

negative attitudes within this population. Consequently, the attitudes of hypertensive individuals are solely derived from their own volition. A positive correlation exists between an individual's knowledge and their capacity to make judgments [26]. This assessment will serve as the foundation for an individual's subsequent actions.

The Spearman test was used for data analysis, revealing a statistically significant correlation between knowledge and the attitude of hypertensive patients toward using TM ($p < 0.001$). The strength of the correlation (r) was determined to be moderate (0.493), and the direction of the correlation was positive (+), indicating that the variables were positively associated as depicted in Table 4. The findings of this study are consistent with research that also found a significant association between the knowledge and attitudes of elderly individuals and their utilization of TM for hypertension management, as determined through bivariate analysis employing the chi-square test [19].

The study's findings indicate that the mean scores for knowledge and attitude fell within the sufficient range. However, it is worth noting that there were participants who demonstrated an adequate level of knowledge but displayed a favorable attitude and participants who exhibited a sufficient level of knowledge but lacked a positive attitude. This phenomenon may arise due to discrepancies between individuals' knowledge and mindset. Hypertensive patients may possess theoretical knowledge regarding their condition yet fail to apply and utilize it effectively, impacting their consequent attitudes.

Knowledge and attitudes are considered predisposing factors for behavior, as demonstrated in the present study. There exists a clear correlation between knowledge, attitudes, and the regular practice of ingesting herbal medication [32]. The utilization of TM among hypertension patients in Sabak Auh Community Health Center is influenced by their knowledge and attitudes. The appropriateness of utilizing TM is positively correlated with the level of knowledge and attitudes exhibited by hypertensive patients. Incorporating TM as a suitable adjunctive treatment for hypertension can yield advantageous outcomes for individuals with hypertension while mitigating undesirable side effects.

Conclusion

The research findings suggest a statistically significant association between knowledge and the attitude of hypertension patients about the utilization of TM. Specifically, the results indicate that as knowledge levels increase, there is a corresponding improvement in the attitude of hypertensive patients toward the use of TM.

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