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The Factors of Information Exposure, Cost and Community Perception on Utilization of Traditional Health Services

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ABSTRACT

Traditional health care remains the community's preferred choice amidst the modern health care system. However, its utilization is not optimal due to various factors. This study aims to analyze the influence of these three factors on the utilization of traditional health services in Pekalongan City. The study employed a cross-sectional design with a quantitative approach. A sample of 393 respondents was selected using the proportional random sampling technique. Data were collected through a structured questionnaire and analyzed using the Chi-square test and multiple logistic regression. The results showed that cost and perception variables were related to utilization, while the information exposure factor was not statistically proven to be associated. Cost was the largest influencing factor; respondents who rated the cost of services as affordable were 3.5 times more likely to utilize traditional services. Cost and perception contribute significantly to the utilization of traditional health services. Policies focusing on improving community perceptions and affordability are needed.

KEYWORDS Traditional health services, cost, perception, information, health service utilization.

INTRODUCTION

The World Health Organization (WHO) recognizes that traditional and complementary medicine (T&CM) is a vital component that is often underpaid in the global health system. Although often overlooked, the service is spread across almost all countries with an ever-increasing demand (WHO, 2013).

Based on WHO data until 2022, around 80% of the world's population in 170 countries out of a total of 194 countries use traditional medicine. This practice reflects local wisdom, skills, and hereditary knowledge of the community in efforts to prevent, diagnose, and handle physical and mental illnesses (WHO, 2022).

Traditional medicine still exists as an alternative to health, demonstrating the complexity of socio-cultural phenomenatttt6 involving various aspects of

life. The Indonesian people's preference for this treatment system illustrates the strong efforts to maintain the values of ancestral heritage (Anandaputri, 2023).

The WHO Strategy 2014-2023 for strengthening traditional health services includes three focuses: (1) the establishment of knowledge-based national policies; (2) regulation of products, practices, and practitioner training to ensure safety and effectiveness; (3) the integration of traditional services into the universal health system through the utilization of local resources (WHO, 2013). Traditional health services are defined as treatment methods or treatments that rely on hereditary empirical experience, according to social and cultural norms of the community (Sharma & Singh, 2016). These services, often deeply embedded in the cultural practices of various societies, aim to restore balance and well-being (Van Andel et al., 2014). The integration of traditional health practices into modern healthcare systems has been explored as a means to provide accessible and culturally appropriate care (Vickers & Zollman, 2012). Despite challenges in standardization and regulation, the demand for traditional medicine remains strong in many countries, particularly in rural areas where modern healthcare services are limited (Bodeker et al., 2014). Regulatory frameworks for traditional health services are essential for ensuring the safety and effectiveness of treatments while protecting cultural heritage (WHO, 2013; WIPO, 2019). Furthermore, integrating traditional health practices can also contribute to sustainable healthcare by utilizing locally available resources (Liu et al., 2017).

The development of these services continues to adapt to technological advancements, driven by the trend of "back to nature". The government regulates traditional health services through Law No. 17 of 2023 Article 160 Paragraph 3, which emphasizes the supervision of the central and regional governments to ensure safety and conformity with socio-cultural norms (AgroMedia, 2008).

Government Regulation No. 103 of 2014 classifies traditional health services into three types: (1) empirical (empirically proven benefits); (2) complementary (combining biomedical and biocultural sciences); (3) integrative (combination of conventional and traditional medicine). All three must meet the aspects of safety, benefits, and compatibility with religion and culture (Ministry of Health, 2014).

The use of herbal medicines is recommended as the primary therapy if the risks and benefits are comparable to conventional treatment, especially in cases of severe illness that are not responsive to standard therapy (Benzie & Wachtel-Galor, 2011).

Riskesdas data in 2013 shows that 30.4% of people use traditional health services, with 49% using traditional herbs. In 2018, this figure increased to 31.4%, with the proportion of herbs becoming 48% and independent herbs 31.8%. The 2023 survey recorded utilization of 32.5%, dominated by independent herbs (52.6%). Provinces such as East Java (50.9%) and DI

Yogyakarta (47.1%) are the highest users. The age group of 55-64 years, women, and self-employed are the main users. However, the use of finished herbs tends to decrease (RISKESDAS, 2018).

Research by Dafriani (2016), Aris (2018), and Tika (2021) proves the effectiveness of herbal herbs in controlling hypertension, a major cause of global morbidity. Jamu, as Indonesia's cultural heritage, is recognized by UNESCO as *Intangible Cultural Heritage*. Temulawak is designated as a leading medicinal plant to support the independence of the national pharmaceutical sector (MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA, 2023).

Permenkes No. 003/MENKES/PER/I/2010 encourages scientific research on herbal medicine involving trained health workers. As a result, herbal medicine has been shown to be effective in treating degenerative diseases such as hypertension, diabetes, and obesity, whose prevalence has increased based on Riskesdas 2013-2018.[18],[19]

In Pekalongan City, UPTD Herbal Medicine Service and Scientific Center (BPSJ) has been a traditional health service center since 2015, consisting of P4TO units, herbal clinics, and laboratories. However, preliminary studies show that 70% of respondents are unaware of the existence of BPSJ, and 80% have a negative perception of traditional medicine. As many as 60% are reluctant to use this service because of their own costs despite having JKN.[20],[21]

BPSJ visit data shows fluctuations: 335 patients (2018), down 41.79% (2019), 22.05% (2020), up 8.9% (2021), then down again 14.3% (2022) and 31.4% (2023). The number of new patients also decreased significantly, from 91 (2021) to 38.46% (2022) and 30.35% (2023). Promotion through radio and posters was hampered by budget constraints.

The Anderson Behavioral Model theory states that the use of health services is influenced by predisposing factors (age, education), enabling (cost, access), and needs.[22] Research by Dewi & Nisa (2019) confirms that age, occupation, distance, knowledge, rates, and perceptions influence the choice of traditional medicine.[23] The study of Razi et al. (2023) and Eryanto & Salman (2021) also found the relationship between cost, trust, and the role of family with the use of herbs.[24], [25]

Even though the government has issued regulations such as Permenkes No. 15 of 2018, the utilization of services at BPSJ Pekalongan remains low. Promotional efforts have not been optimal, so an in-depth analysis of the inhibiting factors is needed.

Based on the description above, this study aims to analyze the factors of information exposure, costs and public perception of the use of traditional health services in Pekalongan City.

RESEARCH METHODS

The independent variables in this study were information exposure, cost, and perception. The dependent variable was the utilization of traditional health services. This study employed a quantitative, cross-sectional explanatory research design.

Primary data were collected directly from research subjects, while secondary data were obtained from journals, previous studies, and the Pekalongan City Health Office. The data collection process began after obtaining a research permit from the Master of Health Administration and Policy Program at Diponegoro University, which was submitted to the Pekalongan City DPMPTSP. Five enumerators with health-related undergraduate degrees were trained to ensure consistent understanding of sample selection and data collection procedures. Researchers and enumerators conducted face-to-face interviews with respondents selected according to criteria. Before completing the questionnaire, respondents were informed about the study's purpose and gave consent by signing an informed consent form. The researcher checked the completeness of each questionnaire and asked respondents to complete any missing sections before leaving the site. The sample consisted of 393 respondents selected through proportional random sampling using inclusion and exclusion criteria.

Data analysis included univariate analysis to describe respondent characteristics, bivariate analysis using the Chi-square test to examine relationships between variables, and multivariate analysis using multiple logistic regression to identify the most significant factors. Normality tests (Kolmogorov-Smirnov and Shapiro-Wilk) indicated abnormal distribution, so the median was used as the cut-off point.

RESULTS AND DISCUSSION

Respondent Characteristics

Table 1. Distribution of Respondent Characteristics

Variable	Category	Frequency (N)	Percentage (%)
Gender	Man	110	28,0
	Woman	283	72,0
	Total	393	100,0
Age Group	≤30 Years	55	14,0
	31–50 Years	223	56,7
	>50 Years	115	29,3
	Total	393	100,0
Education	Not Going to School/Graduating from Elementary School	15	3,8
	Graduating Sd/Mi	123	31,3

Variable	Category	Frequency (N)	Percentage (%)
	Graduation Junior High School/Mts	94	23,9
	Graduating from High School/Vocational School/Ma	129	32,8
	Graduation of Academy (D3)	21	5,3
	Graduate Degree (S1)	11	2,8
	Total	393	100,0
Work	Not Working	108	27,5
	Laborer	100	25,4
	Merchant	37	9,4
	Farmer	3	0,8
	Private Employees	50	12,7
	Entrepreneurial	17	13,7
	CIVIL SERVANT/TNI/POLRI	4	1,0
	Other	74	18,8
	Total	393	100,0

The characteristics of the study respondents included gender, age, education, and occupation. In the table, it can be seen that as many as 72% of respondents are women. The dominant age group was 31-50 years old (56.7%), followed by >50 years old (29.2%). The majority of respondents had a high school/vocational/MA education background (32.8%) and elementary/middle school (31.3%). Most of the respondents were not employed (27.5%) or worked as labourers (25.4%).

Univariate Analysis (Based on Variable Categories)

Univariate analysis was performed to describe the frequency distribution of independent variables.

1. Perception of Traditional Medicine

Table 2. Perceptions of traditional medicine

Perception Category				
	Frequency	Percent	Valid Percent	Cumulative Percent
ValidLess	153	38.9	38.9	38.9
Good	240	61.1	61.1	100.0
Total	393	100.0	100.0	

Perception of Traditional Medicine, As many as 61.1% of respondents (n=240) have a good perception of traditional medicine, while 38.9% (n=153) have a poor perception.

2. Information Exposure

Table 3. Exposure to traditional medicine

Categories Information				
	Frequency	Percent	Valid Percent	Cumulative Percent
ValidLess	86	21.9	21.9	21.9
Good	307	78.1	78.1	100.0
Total	393	100.0	100.0	

In the univariate test table of information exposure categories, it can be seen that the majority of respondents (78.1%, n=307) have good information exposure, while 21.9% (n=86) are in the poor category.

3. Cost

Table 4. Costs of traditional medicine

Cost Category				
	Frequency	Percent	Valid Percent	Cumulative Percent
ValidLess	93	23.7	23.7	23.7
Good	300	76.3	76.3	100.0
Total	393	100.0	100.0	

In the univariate test table of the information exposure category, it can be seen that as many as 76.3% of respondents (n=300) assessed the cost of traditional medicine as good, and 23.7% (n=93) stated that it was lacking.

Bivariate Analysis (Using the Chi-Square Test)

Bivariate analysis uses *the Chi-Square* test to test the relationship between independent variables and traditional healthcare utilization.

1. The Relationship between Perception and the Utilization of Traditional Health Services

Table 5. Crosstabulation of the category of perception and utilization of traditional health services

Perception Category * Crosstabulation Utilization Category					
			Utilization Categories		
			Less	High	Total
Perception CategoryLess		Count	23	130	153
		% within Perception Category	15.0%	85.0%	100.0%
	Good	Count	14	226	240
		% within Perception Category	5.8%	94.2%	100.0%
Total		Count	37	356	393
		% within Perception Category	9.4%	90.6%	100.0%

Chi-Square Tests

Table 6. Chi-Square Tests test results

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.272a	1	.002
Continuity Correctionb	8.224	1	.004
Likelihood Ratio	9.002	1	.003
N of Valid Cases	393		

0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.40.

There was a significant relationship between perception and utilization (*p=0.004*). Respondents with *good* perception tended to use traditional health services higher (94.2%) than those with *less perception* (85.0%).

2. The Relationship between Information Exposure and the Utilization of Traditional Health Services

Table 7. Crosstabulation of information exposure with the use of traditional health services

Category Information Exposure * Category Crosstabulation Utilization

			Utilization Categories		
			Less	High	Total
Categories of Information Display	Less	Count	11	75	86
		% within Category Information Display	12.8%	87.2%	100.0%
	Tall	Count	26	281	307
		% within Category Information Display	8.5%	91.5%	100.0%
Total		Count	37	356	393
		% within Category Information Display	9.4%	90.6%	100.0%

Chi-Square Tests

Table 8. Chi-Square Test Results

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.471a	1	.225
Continuity Correctionb	1.008	1	.315
Likelihood Ratio	1.377	1	.241
N of Valid Cases	393		

0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.10.

The results of the Chi-Square Test between information exposure and utilization showed that there was no significant relationship between information exposure and utilization (*p=0.315*). The group with high

information exposure had 91.5% utilization, while the underserved category was 87.2%.

3. The Relationship between Cost and Utilization of Traditional Health Services

Table 9. Crosstabulation of cost categories and utilization of traditional health services

Cost Category * Crosstabulation Utilization Category					
			Utilization Categories		
			Less	High	Total
Cost Category	Low Cost	Count	21	72	93
		% within Cost Category	22.6%	77.4%	100.0%
	High Cost	Count	16	284	300
		% within Cost Category	5.3%	94.7%	100.0%
Total		Count	37	356	393
		% within Cost Category	9.4%	90.6%	100.0%

Chi-Square Tests

Table 10. Chi-Square Tests Test Results

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.762a	1	.000
Continuity Correctionb	22.781	1	.000
Likelihood Ratio	20.973	1	.000
N of Valid Cases	393		

0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.76

Cost has a significant effect on utilization (*p<0.001*). Respondents who rated *the high* cost of using traditional health services were higher (94.7%) than the *low category* (77.4%).

Multivariate analysis (with multiple logistic regression tests)

Multiple logistics regression analysis was conducted to determine the dominant predictors of the use of traditional health services. Based on the results of the selection of independent variables, the information exposure variable did not meet the multivariate analysis selection because the p > value was 0.25.

Table 11. Results of Multiple Logistic Regression Analysis

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Perception Category	.425	.393	1.171	1	.279	1.530	.708	3.305
Cost Category	1.200	.384	9.782	1	.002	3.319	1.565	7.039
Constant	.925	.277	11.108	1	.001	2.521		

a. Variable(s) entered on step 1: Perception Category, Cost Category.

Furthermore, the Perception variable was excluded from the modeling (because it had the largest p-value of 0.279), so that a fixed modeling was finally obtained.

Table 12. Results of Multiple Logistic Regression Analysis

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Cost Category	1.258	.380	10.977	1	.001	3.520	1.672	7.411
Constant	1.048	.256	16.748	1	.000	2.853		

Variable(s) entered on step 1: Cost Category.

Table 13. Model Summary

Step	- 2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	217.131a	.069	.149

Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

In the multiple logistics regression analysis, it was shown that the Cost Category was significant (p=0.001) with OR = 3.520.

This model has a Nagelkerke R Square = 0.149, indicating that the magnitude of the influence of the variable is 14.9% and the rest is influenced by various other variables.

Discussion

Information Exposure Factors to the Utilization of Traditional Health Services

Based on univariate analysis, the information exposure variable showed that respondents who were exposed to information about traditional medicine were high at 78.1%.

In bivariate analysis with the Chi-Square test, it was shown that there was no significant relationship between information exposure and the use of traditional health services (p=0.315). Respondents with exposure to high-category information had 91.5% utilization, while the underserved category was 87.2%.

In a study conducted by Ismail (2015) stated that there was an influence between information sources (p=0.021) and concluded that the more information obtained by the public about the selection of traditional medicines on the community's decision in choosing traditional medicines. The findings are also corroborated by research that shows that information sources can influence patients in choosing the type of service (Hayati, 2021).

The authors argue that although information is available, other factors may be more dominant in influencing the decision to utilize the service. This opinion is reinforced by findings from research Purwohko et al., (2023), which found that individuals with higher socio-economic status and education tended to be more likely to take advantage of traditional health services compared to those with lower status. This indicates that the availability of information alone is not enough to increase the utilization of such services without considering other factors that influence individual decisions.

According to Riswandi (2020) That traditional health services run well with the ease of an effective communication process which can be interpreted as ease of access to information by considering disposition factors and bureaucratic structure factors that still have an influence on traditional health services.

Cost Factors on the Utilization of Traditional Health Services

Based on univariate analysis, the cost variable shows that most of them state that the cost of traditional medicine is low or by 76.3%.

In bivariate analysis with the Chi-Square test, it was shown that there was a significant relationship between cost and the utilization of traditional health services (p=0.000). Respondents with low category costs had utilization of 94.7%, while *high* category had utilization of 77.4%.

Multiple logistic regression analysis showed that after controlling for other variables, cost remained a significant factor influencing the utilization of traditional health services (p=0.001; OR=3,520). This shows that the opportunity for the use of traditional health services will increase by 3,520 times if the cost aspect is lower.

These findings are in line with the fact that traditional medicine often does not have a fixed rate, making it more flexible for people with economic limitations. Although the government has provided health services through BPJS, KIS, and other insurances, some people still choose traditional medicine because there is no binding fee provision from traditional service providers. This allows people to adjust medical costs to their financial means, thus making traditional health services more accessible (Amisim et al., 2020).

This research is in line with Squirrel (2021) Where economic factors (p=0.126) also greatly affect the choice of traditional medicine due to cost.

Perception Factors for the Utilization of Traditional Health Services

Based on univariate analysis, the perception variables showed that most had a good perception of traditional medicine or 61.1%, in line with research by Handayani et al., (2019) about the perception of the people of Purwakarta Regency towards traditional medicine, that the perception of trust and efficacy in traditional medicine is on a sufficient scale (51.7) where respondents believe that traditional medicine is part of the effort of health.

In bivariate analysis with the Chi-Square test, it was shown that there was a significant relationship between the perception of traditional medicine and the use of traditional health services (p=0.004). Respondents with a

perception of traditional medicine in *the good* category had 94.2% utilization, while the *poor* category had 85% utilization.

These results are in line with research Scott, et al (2022) which shows that the positive perception of the public is 89.2% towards complementary and alternative therapies that are part of traditional medicine. Positive perceptions of the effectiveness and safety of traditional medicine encourage individuals to prefer such services.

In multiple logistics regression analysis, the perception variable in the early stage had a value of p:0.206, so it was excluded from the logistics regression model in the next stage, this indicates that perception has a relationship, but in this study it has no effect on the use of traditional health services. Therefore, while positive perceptions may drive the use of traditional services, other factors such as cost and accessibility may be more dominant in people's decision-making.

CONCLUSION

This study found that cost and community perception significantly influenced the utilization of traditional health services, whereas exposure to information did not show a statistically significant relationship. To enhance the use of traditional health services, policies should prioritize improving public perceptions and making services more affordable. For future research, it would be valuable to explore other potential factors affecting utilization, such as cultural beliefs or service quality, as well as investigating the effectiveness of targeted interventions designed to improve perception and reduce cost barriers.

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