Correlation Between Knowledge and Practice of Traditional Self-Medication Among People in Semarang

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Abstract. Self-medication presents a dual-sided approach recognized by the World Health Organization (WHO) for its potential to alleviate strain on global healthcare systems. However, its misuse can result in significant adverse outcomes. This research aimed to assess the understanding and practice of self-medication with traditional medicine in Semarang. Methodologically, a cross-sectional survey involving 100 participants purchasing traditional medicine from Pharmacy X in Semarang in July 2023 was conducted. Data were analyzed using Spearman correlation in SPSS version 23. The study found that 53% of respondents were male, predominantly holding bachelor's degrees (60%), with a mean age of 34.78 years. Most participants (80%) learned about traditional medicine through advertisements. The most frequently used branded products were Tolak Angin (46%) and Antangin (20%), primarily chosen for health restoration (42%) and minor ailment treatment (40%). Among the participants, 75% reported no adverse effects from traditional medicines. Reasons for self-medication included perceived effectiveness (45%), although chemical alternatives were preferred if symptoms persisted (30%). Participants' knowledge levels varied, with 47% considering themselves adequately informed, 39% well-informed, and 14% less knowledgeable. Gender was found to correlated with knowledge levels (P=0.019).

Keywords: Traditional Medicine, Knowledge, Practice, Self-medication.

1 Introduction

Self-medication is a double-edged sword which is appreciated by the World Health Organization (WHO) since it can reduce the unnecessary pressure on the world health care system (1). Traditional or known also as Herbal medicines are substances that one can eat or drink and may be herbs or parts of these substances. They also can be defined as ‘plants or plant parts used for their therapeutic properties. Herbal medicines are distinct from drugs wherein they are exempted from needing to meet premarketing safety and efficacy standards required for conventional drugs to adhere to (2).

Traditional medicine takes a very important rules in health care in the world in general, in Indonesia and Semarang in particular. The use of herbal medicines has increased remarkably throughout the world, with many people now using these products for the

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treatment of many health problems in health care practice across different countries. Historical data show that herbal or traditional medicine has been used for over 5000 years (3) The usage of herbal medicines in the world varies depending on location and the prevalence has increased recently.

The global consumption of herbal products and medicines is enormous, it is time they were included in pharmacovigilance systems. In terms of population exposure alone, it is essential to identify the risks associated with the use of herbal medicines, and in this regard, the safety of using traditional products has become an issue of great public health importance (4). Challenges often encountered and common to many countries are those related to regulatory status, assessment of safety and efficacy, quality control, safety monitoring and inadequate or poor knowledge about traditional, complementary/alternative, and herbal medicines within national drug regulatory authorities (2). However, self-medication, especially in traditional medicines can lead to severe consequences if it utilized inappropriately.

The objective of this study is to explore the characteristic of people who use traditional medicine without prescription. Also, to know if there were any correlation between the characteristic sociodemographic and its level of knowledge.

2 Subjects and Methods

2.1 Study Population

A cross-sectional study, descriptive and questionnaire based was carried out In Semarang, and the population were people who buy traditional medicine in Pharmacy X and had been counselled by pharmacist.

2.2 Sample size Determination

To calculate the number of samples with an unknown population, the Lemeshow formula is used.

$$n = \frac{Z^2_{1-\frac{a}{2}}\, p(1-p)}{d^2}$$

- n is number of minimal sample

$Z_{1-\frac{a}{2}}$ is standard value of the normal distribution according to the desired confidence level (e.g., for a 95% confidence level, = 1.96) - d is margin of error (e.g. 10%) -p is the prevalence of an outcome or the proportion of the population that has a particular characteristic (for example, 50%).

$$n = \frac{1{,}96^2 . 0{,}5(1 - 0{,}5)}{0{,}1^2}$$

$$n = \frac{3{,}8416 . 0{,}25}{0{,}01}$$

$$n = 96{,}04$$

By using this formula the number of minimal sample is 96.04 and rounded to 100.

2.3 Sampling Technique and Study tools

An accidentally sampling technique was adopted. A descriptive cross-sectional study was conducted on July 2023 and 100 persons were participating in this study and filling out a questionnaire after being counselled by the pharmacist.

The questionnaire was used to take the data: sociodemographic characteristics, such as gender, age, education, income and working. Also 10 questions about knowledge of traditional medicines, here they are the questions

1. Do you know beforehand that purchasing traditional medicine is appropriate for the symptoms you are experiencing?
2. Do you know the contraindication of the traditional medicine that you buy?
3. Do you know the dosage form of the traditional medicine you are buying?
4. Do you know the rules for using (dosage) of traditional medicine that you bought?
5. Do you know how to consume the traditional medicine you purchased?
6. Do you know what side effects will arise if the traditional medicine you buy is not suitable for use?
7. Do you know how to deal with possible side effects?
8. Do you know the rules for using traditional medicines that you buy and cannot be taken together with other chemical medicines?
9. Do you know how to store the traditional medicines you buy?
10. Do you know the expiration date of the traditional medicine you purchased?

2.4 Ethical Consideration

This study had already approved by Institutional Health Research Ethics Committee of STIFAR Yayasan Pharmasi Semarang (reference number: 517/YP-NA/KEPK/STIFAR/ EC/VII/ 2023). Informed consent was taken from each person after explaining the purpose of the study. Respondents were assured of the confidentiality of their responses.

2.5 Data Analysis

The level knowledge is measured using the Guttman scale by providing a score of 1 for the correct answer and a score of 0 for the wrong answer, and then classified into 3 categories, namely: less (<60%), enough (60-75%) and good (>75%).

Data were collected and statistically analyzed using the SPSS software version 23. Quantitative data were described as numerals and percentages. The data then were analyzed with Spearman correlation using SPSS software (version 23) to know if there was an association or correlation between knowledge and practice.

3 Result

We composed 10 questions that has already passed the validity and reliability test. All the questions were declared valid and has a calculated r value (Table 1) which is greater than the r table (0.444). Based on the reliability test on the patient knowledge questionnaire, the results were the Cronbach's Alpha value was 0.850 which is greater than the standard (0.700) indicating that the patient knowledge questionnaire was declared reliable.

Table 1. Table 1 Result of Questioner Validation

Question no	r Table	r Count	Result
1	0.444	0.621	Valid
2	0.444	0.716	Valid
3	0.444	0.512	Valid
4	0.444	0.612	Valid
5	0.444	0.579	Valid
6	0.444	0.628	Valid
7	0.444	0.819	Valid
8	0.444	0.722	Valid
9	0.444	0.763	Valid
10	0.444	0.497	Valid

The mean age of subjects was 34,78 ±11.08 years, the oldest was 61 years and the youngest was 19 years old, with a higher amount of (18-44 years, 78%). Most of the subjects were men (53%) and the majority (60%) were ever study in a college (data are not shown in tables).

From Fig. 1, we knew that the subjects level knowledge was enough, good and less (47%, 39% and 14% respectively). Although most of the subjects were well educated, but the most level knowledge was only enough /fair. There were many other stronger factors that could influence a person's knowledge about traditional medicine. Apart from that, knowledge about a treatment that could heal is obtained from generation to generation, then this talent could be deepened through information received either by self-education or from other external factors such as the environment (5).

Fig. 1. The subjects' knowledge level

Table 2. Correlation of Subjects' Characteristic and level of knowledge

No	Characteristic		Knowledge Level			Sig	Notes
			Good	Enough	Less		
1	Age	19-44 yr	28	40	10	0.139	No correlation
		45-59 yr	10	7	4		
		≥ 60 years	1	0	0		
2	Gender	Women	18	20	9	0.024	Correlate
		Man	21	27	5		
3	Occupation	Employee	21	21	12	0.344	No correlation
		Students	14	13	0		
		Others	4	13	2		
4	Education	College	21	32	7	0.249	No correlation
		Senior high school	18	15	5		
		Yunior high school	0	0	2		
5	Monthly income	5.000.000-10.000.000	7	7	1	0.149	No correlation
		2.000.000-5.000.000	28	36	12		
		<2.000.000	4	4	1		

The respondents' age between 19-44 years are the most, they are people in the productive age, the physical activity they undertake tends to be heavier than the other age. They are still work, go anywhere, so they can go and buy the traditional medicine in pharmacy X. Employee are the most occupation and college was the most education, cause this research was conducted in a big city, the capital of Middle Java Island. Another research, conducted in Sangihe island state the most respondent education are high school (6).

From Table 2, we knew that only gender/sex that had a correlation with level of knowledge. Women tend to understand more about traditional medicine than men, this is because women have more interest in understanding a treatment in depth compared to men (7). This result is the same with another research in Ethiopia, it declared there was no relationship or association between respondents age, educational status and the practice of Traditional Medicine respectively, as all tests of association were not statistically significant $P > 0.05$ (8).

On the contrary, other studies showed an association with some demographic variables such as educational level. Another survey in Turkey showed a significant asso-

ciation with almost all demographic variables considered (9). Another study's find-ings were consistent with those of other studies, which reported a degree of independ-ence between sociodemographic factors and the use of traditional medicines (8) Any dis-crepancy might be attributed to different perspectives and definitions of traditional medicines among different populations due to variations in the recognition and valua-tion of traditional medicines as well as attitudes towards traditional medicines among different cultures (10).

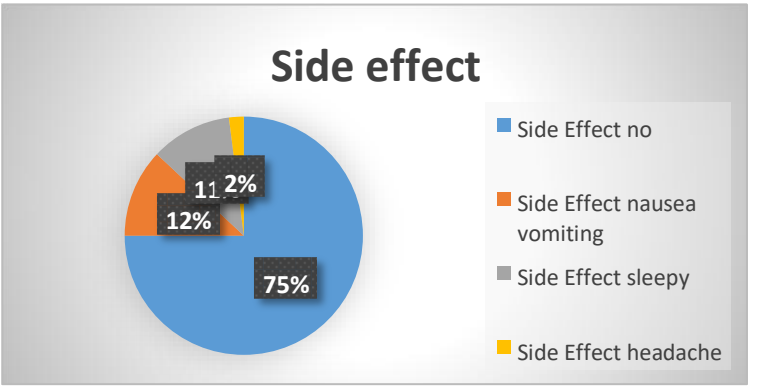

Fig. 2. Perceive side effect

As depicted in Fig. 2, our study revealed that 75% of participants reported no per-ceived side effects. The most commonly reported side effects were nausea (12%) and drowsiness (11%). There is a prevailing assumption among the public, and even among some medical professionals, that herbal medicines are innocuous and thus preferable to conventional medicines (11). Conversely, another source indicates that approximately 10-15% of Adverse Drug Reaction reports received by the National Center are linked to Traditional Chinese Medicine (TCM) drugs, predominantly involving formulated products (12).

Advertising was the most source (80%) from which they know about traditional med-icine. The most used branded traditional medicine was Tolak Angin and Antangin, 46% and 20% sequentially. The selection of these product was in accordance with the in-tended used, to restore health (42%) and to treat minor illnesses (40%). Out of the total 100 participants, 75% declared that they don't feel the side effects of traditional medi-cines. The main reasons for self-medication of traditional medicine was their believed of its potency (45%), but if the symptom still remain, they would use the chemical medicine (30%).

From Fig. 3, we saw that Tolak angin and Antangin were the most bought, 46% and 20%, respectively. The two branded traditional medicines were used by people who catch a cold, while the composition was Foeniculi Fructus, Isorae Fructus, Caryophylli Folium, Zingiberis Rhizoma, Mint leaves and Honey. This was the same with the re-search in Nigeria. Damakese (an active compound) was the most commonly used tra-ditional medicine, used by 295 (36.7%) participants to treat the common cold and ton-sillitis (13).

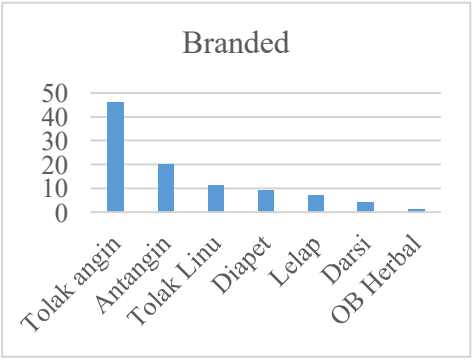

Fig. 3. Branded traditional medicine that people by the most

The primary reason cited for traditional self-medication was belief in its effectiveness, followed by cost-effectiveness (45% and 26% respectively), with the least common reason being the avoidance of needing a doctor's prescription (3%). The study population predominantly used herbal medicines to treat illnesses and maintain health, followed by preventing diseases, reflecting logical motives for using such products. Family and friends were the most frequent sources recommending herbal medicines, followed by pharmacists, with physician recommendations ranking lower (10).

The growing trend of herbal self-medication can be attributed to several factors, including patients' discomfort in discussing medical issues and concerns over confidentiality in healthcare settings, fear of potential misdiagnosis and inappropriate treatment for nonspecific symptoms or general discomfort, and time constraints preventing visits to healthcare providers, especially after previous unsatisfactory experiences (14).

Similar to conventional medicines, licensed herbal medicines undergo rigorous evaluation for safety, quality, and efficacy, necessitating comprehensive information such as indications, precautions, usage guidelines, potential side effects, storage instructions, and regulatory details provided in leaflets accompanying the product packaging (15). However, due to insufficient evidence demonstrating reproducible efficacy to meet regulatory standards, some herbal medicines cannot obtain conventional product licenses. This gap has led to the establishment of a new category known as traditional herbal registration (1).

In this study factors associated with traditional medicine practice were assessed using a cross-sectional design, and the respondents were only small amount and so can’t represent all the people in Semarang.

4 Conclusion

The knowledge point of people in Semarang, was enough, good and less (47%, 39% and 14% respectively). Advertising was the most source (80%) from which people knew about traditional medicine. Tolak Angin was the most bought branded traditional medicine. Moreover, there was a correlation between gender and the knowledge (P=0.019) but no correlation with other item characteristic sociodemographic

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