The existence of traditional medicinal plants in megapolitan city communities

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Abstract. The purpose of this study is to explain and analyze people's perceptions of medicinal plants in Medan seen from personal factors, group influence factor, cultural factor, cultivation and marketing of medicinal plants in Medan. The population was all people of Medan who used traditional medicinal plants that were randomly selected to be used as research samples. Primary data were obtained using a questionnaire and using a Likert Scale analysis tool and confirmatory factor analysis using AMOS software. The results showed that people's perception of traditional medicinal plants in the city of Medan was positive. All factors that support people's perception of medicinal plants are proven to be accepted and approved. People of Medan believe in medicinal plants in curing various diseases and increasing body immunity. This has an impact on the use of home yards and agricultural land as a location for the cultivation of traditional medicinal plants, as well as selling to various districts in the Province of North Sumatra.

1. Introduction

All countries in the world have their own culture in the form of healing using medicinal plants as a characteristic of plants and their healing methods. Humans have a way of life and lifestyle as a phenomenon related to the emergence of various diseases. Indonesia has many ethnic groups. They have their knowledge and systems or methods for conducting traditional medicine. North Sumatra is one of the Megapolitan cities in Indonesia which has diverse sources of traditional medicinal plants. North Sumatra Province cultivates traditional medicinal plants that are sustainable for 15 commodities. But the production of these traditional medicinal plants has decreased since 2016-2017 such as curcuma, temuireng, temukunci, dringo, cardamom, kejibeling, and bitter. Two types of medicinal plants namely turmeric and ginger have increased production [1] [2].

People of North Sumatra believe since ancient times to use traditional medicinal plants to cure diseases, maintain health, and beauty. There is a perception and belief that it’s more safety because they don’t have the side effects of chemical drugs. There is a change in lifestyle to use natural materials as well as the impact of the economic crisis to change the behavior of the people of North Sumatra to grow traditional medicinal plants. Medicinal plants are one part of the lifestyle of modern
society in the province of North Sumatra today because they are considered to be safer and trusted according to the needs of today's urban society. People in Medan also have positive perceptions and believe in herbal medicine using medicinal plants because of the experience of failure to use modern medicine, a large cost factor when using modern medicine, the risk of side effects caused so that traditional medicine using herbal medicine accompanies modern medicine [3].

Information obtained from the health reports of the Province of North Sumatra in 2016 and 2017 showed that traditional medicine small businesses and the pharmaceutical traders were increased. The data proves that there is an increase in public consumption of traditional medicine with param, pilis, liquid medicine outside and chopped and the increasing public confidence in the commodity of traditional medicine [4].

So, this study was conducted to determine and analyze the existence of traditional medicinal plants in North Sumatra through the perception of the community that was built from personal factors, group influence factors, cultural factors, cultivation and marketing of medicinal plants in Medan city.

2. Methods

This research is an explanatory study using primary data collected from a questionnaire. The secondary data is traditional medicinal plants in North Sumatra collected from various sources.

The population of this research is all of the people of North Sumatra who believe and use traditional treatment methods by utilizing traditional medicinal plants. The research sample used was 100-300 respondents following the provisions of the ideal sample size for the Confirmatory Factor Analysis [CFA] method with Amos [5] and obtained in a total of 200 respondents. They were randomly selected. The data were analyzed using confirmatory factor analysis to see people's perceptions of traditional medicine. Moreover, the data were also analyzed to elucidate how personal factors, group influence factors, cultural factors, cultivation and marketing of medicinal plants in North Sumatra were able to influence community perception. Confirmatory Factor Analysis tool used Amos.

3. Results and discussion

3.1. Descriptive analysis

The respondents could be divided into 3 groups, they are a) 0-14 years old [21%] b) 15-65 years old [65%] and c) > 65 years old [14%]. People in age groups of 15-65 years old is the most traditional medicinal plants' user because they believed that natural medicine has no side effect and risk than artificial chemical.

Users of these traditional medicinal plants are 74% of females and 26% of males. Women are the most in using traditional medicinal plants because they are simpler, healthier and safer in the long term. They believed it has minimal side effects on their health and the results were safer.

The educational background of the respondents in this study is classified on: 2% [S2; Master], 43% [S1; Bachelor], 5% [D3; Diploma], 30% [high school], 20% [< junior high]. The majority user is Bachelor and Senior High/equivalent. It indicates that the users of these traditional medicines, despite having higher education or a degree, they were influenced by perception and opinion that using traditional medicinal plants is safer and cheaper, far from long-term chemical risks. Most of the traditional medicinal plants were used as herbal medicine [78%] and the rest [22%] were used for external treatment such as topical medication/ribs, masks for beauty, and aromatherapy.

The other reasons in using traditional medicinal plants are due to failure in using modern medicine [53%], trust [14%], treatment with traditional medicinal plants is cheaper and easier [5%], and 10% of them used traditional medicinal plants because they are easy to be planted, 5% is because of they have a wide market, so it is easy to find them.

Traditional medicinal plants which are commonly used in North Sumatra are turmeric, nipah leaves, nakang leaf, lime, ginger, pepper, clove, garlic, galangal, bitter, kumis kucing. The North Sumatra SP3T stated that traditional medicinal plants used in North Sumatra which are mostly used by

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the people of North Sumatra are turmeric, nipah leaves, nakang leaf, lime, ginger, pepper, clove, garlic, galangal, bitter, kumis kucing. The used traditional medicine because of some reasons for instance advice from others, trust, easily obtained and cheap, also have failed in modern medicine [6]

3.2. Confirmatory factor analysis
The confirmatory test shows that all indicators and items that build the community perception variable on traditional medicinal plants in North Sumatra meet the loading factor value above 0.30, namely personal factor [1.00], group influence factor [1.00], factor cultural [1.00], cultivation factors [1.00] and marketing factors [1.00]. All perception instruments can be accepted and declared to be able to measure the variable of community perception. Meaning that it can be accepted and trusted as a factor influencing community perception of traditional medicinal plants in North Sumatra.

Factors that influence people's perceptions of the use of traditional medicinal plants in North Sumatra were also tested to see which factors most influence community perceptions. The significance test on each relationship between the construct variables can be seen in the following Regression Weight table.

Table 1. Regression weight output

| Relationship Between Variables | Estimate | p     | Results      |
|-------------------------------|----------|-------|--------------|
| Personal factor → Perception  | 3.102    | 0.000 | Significant  |
| Group influence factor → Perception | 1.000    | 0.000 | Significant  |
| Cultural factor → Perception  | 1.846    | 0.000 | significant   |
| Cultivation factors → Perception | 1.499    | 0.000 | significant   |
| Marketing factor → Perception | 1.224    | 0.000 | significant   |

Source: Amos [5]

Test results show that personal factors are the factors that have the most significant and greatest influence to change or shape people's perception of the use of traditional medicinal plants in North Sumatra. Personal factors are considered the most powerful and can significantly affect people's perceptions of traditional medicinal plants in North Sumatra. The reason is because of the “failure” that has ever been experienced by the community against chemical drugs or modern medicine, the fear of bad effects and long-term risks of chemical drugs as well as the perceived cost that is more expensive to spend if using modern medicine with chemical drugs. Besides, this personal factor is related to ancestral heritage or community trust in certain traditional medicinal plants such as ginger, turmeric, bitter that has been used for generations by the family and has succeeded in curing some diseases or used to maintain health.

The majority of users are economically productive age so there are indications that this group does not want to spend money too much on modern medicine so that the use of traditional medicinal plants is considered able to save their money.

The motivation of the people of North Sumatra is also great for using traditional medicinal plants because it is influenced by the fear of side effects and the failure of the use of modern medicine in the past or seeing bad experiences from other people/families towards modern medicine. Ninety percents were highly motivated to use traditional medicinal plants for healing or maintaining personal and family health.

Cultural factors become the second-largest factor known to give a real and strong influence on the perception of the people of North Sumatra on traditional medicinal plants. The culture of the people of North Sumatra, which is rich in ethnic Bataks and Malays as the majority ethnic group, is also very close to the traditional medicinal plants using and is a family inheritance since long ago. There are even some types of traditional medicinal plants that are considered important as part of the cultural heritage of ancestors so that they continue to be used in traditional family medicine or become part of people's daily lives for consumption to maintain family health. Eighty percent of respondents agreed
and gave a positive response to traditional medicinal plants as part of the culture and heritage that must continue to be preserved in traditional medicine and considered safer and provide long-term health benefits.

The cultivation factor is the third factor which is considered to have a strong and real impact on people's perception of the use of traditional medicinal plants to cure diseases or to maintain health. Community perception of this cultivation factor is in a positive category, there are 95% who are agreeing that some traditional medicinal plants produced in North Sumatra such as ginger, turmeric, galangal, bitter, nipah leaves, nakangah leaves, jatropha, betel leaves, pine, spruce, ginger, kencur, pijer leaves, deleng, mangrove, kumis kucing, are known to be difficult to find or their production is not large or limited.

Traditional medicinal plants in North Sumatra are easily processed and can be done by anyone. Generally, community groups cultivate some medicinal plants that they use as alternative treatments without causing side effects. Community knowledge is also very much developed about various types of traditional medicinal plants and their processing techniques for traditional medicine [7], [9]. Some of the strategies carried out are by utilizing home yards or creating agricultural land [if there is land] to plant some traditional medicinal plants. Cultivation is also carried out at home for some medicinal plants that are easily planted or easy to maintain, do not require large costs such as kencur, turmeric, ginger, and betel [7].

Perceptions of cultivation consist of cultivation methods, facilities, and infrastructure for cultivation and capital for cultivation. All of those aspects received a positive response and 85% of people agreed to support the cultivation of traditional medicinal plants in North Sumatra. The way of cultivation gets the biggest and most positive response. Seventy percent of respondents stated it is easy and simple so that it can be done by anyone, especially if done in the yard. Twenty-five percent of respondents agreed that facilities and infrastructure to cultivate medicinal plants are easily obtained while 10% of respondents agreed that the capital used for cultivation is also not expensive.

Other studies are in line with this research, where the perception of cultivation is very positive. They regarded that the way of planting, facilities, and infrastructure, as well as the production capital of some medicinal plants, for instance, sesame plants, are doable. The farmers are enthusiastic in doing sesame cultivation [10].

The marketing factor also received a positive response. There are 75% of opinion expressed opinion agree or at least provide a good perception of traditional medicinal plants in North Sumatra so that marketing is one factor that is considered capable of giving a strong and real influence on the perception of the people of North Sumatra. In line with [10], which stated that marketing also provides a positive perception seen from the response of sesame farmers who rate it well and are very enthusiastic in marketing sesame plants because it is easy to market and the process does not require large costs. Public perception of the marketing of traditional medicinal plants in North Sumatra is good. There are 75% of respondents stated positive, because traditional medicinal plants are easily found in the form of herbal medicines [herbs] for beauty needs. The majority of respondents for this aspect are women. The marketing aspect is also stated to be easy and good because the price offered by the producer is very affordable by all levels of North Sumatra society.

However, 25% of respondents mentioned that they did not agree to give positive perceptions towards the marketing of traditional medicinal plants, even in form of raw materials, semi-finished [herbal ingredients] or already in the form of medicines ready for consumption. Their reason was based, that the fact that most of the traditional medicines do not comply with BPOM or halal label from MUI. They do not clearly describe the drug content and processing. The others mentioned that traditional medicinal plants are difficult to find around them. Even, some claimed that traditional medicinal plant processing is still using chemical drugs techniques or additives so it is not entirely safe from chemical risks.

The group influence factor is the factor that at least gives a real and strong impact in influencing the perception of the people of North Sumatra on traditional medicinal plants. Forty-five percent of respondents agreed that they use traditional medicinal plants because of the influence of others or
family, while 55% disagree. The reason is that not everyone believes that if one individual is suitable or not allergic to traditional medicinal plants, it means that other individuals are the same. This means that the condition of a person's body and health varies between individuals so that even though they experience complaints of the same disease but it cannot be immediately assumed to be able to use the same traditional medicinal plants for its treatment. Further analysis or examination needs to be done on the condition and symptoms of complaints or illness experienced by someone or also a history of previous illnesses. Another reason for disagreeing was because of the respondents' experience which stated that the use of certain traditional medicinal plants that they used on the advice of someone turned out not to have the same effect, the majority of these were the perceptions of female respondents who used traditional medicinal plants in traditional medicine for beauty.

This research is in line with research that took place in the Minahasa Regency. It stated that the perception of the community is known to be very positive and good for hydroponic plants in terms of knowledge, personal factors, group influence factors, and cultural factors [11].

The perception of North Sumatra’s people on traditional medicine is an alternative to healing or maintaining health. It showed by 80% index number using the calculation formula Likert Scale analysis [12], with an average score of 4.28 in the excellent category.

4. Conclusion
The results of research on the perception of the people of North Sumatra seen from personal factors, group influence factors, cultural factors, cultivation factors, and marketing factors are categorized as agree and positive. This means that the people of North Sumatra understand the benefits and processing of traditional medicinal plants that are used as alternative treatments for healing or maintaining public health.

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