

DOI: <http://dx.doi.org/10.33846/hn30502>  
<http://heanoti.com/index.php/hn>



### RESEARCH ARTICLE

URL of this article: <http://heanoti.com/index.php/hn/article/view/hn30502>

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## Factors Related to Utilization of Traditional Massage on Elderly in Case of Myalgia by Employing Theory of Anderson

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### ABSTRACT

**Background:** The rate number of myalgia in Bondowoso District is on the fourth ranking (7.21%). Myalgia is commonly suffered and found in elderly people. Some patients of myalgia consumed painkiller for a long time. This consumption might deliver risk of side effect like to cause obstacles in erythrocyte (red blood cells) formation, gastritis, or even osteoporosis. The side effect of chemical medicine causes to most of myalgia patient need to have non-pharmacological therapy, particularly traditional massage. The utilization of traditional massage on those elderly patients which aims to resolve complaints of myalgia in District of Bondowoso is lesser than their medical visit to public health center in approximately 1.75% or about 86 clients per month. **Methods:** This research was conducted with a cross sectional approach and using chi-square test. The sample size this research was 110 informants and taken by purposive random sampling. **Results:** The results of this research were 69 informants using traditional massage. Further, informants who has as much income per month > 1,801,406 65 people (59.01%). Most informants know as much information about traditional massage are 68 people (61.08%). Most informants stated that access to traditional massage sites is easily accessible are 93 people (84.05%). Informants who stated that traditional massage facilities meet the requirements of 62 people (56.4%). The informants stated that the quality of traditional massage fulfilled the quality requirements of 65 people (59.01%). **Conclusion:** Overall, both the factor of probability and need have relation to the utilization of traditional massage. Moreover, the probability factor (service quality and information) has greater determinant relation to this utilization of traditional massage on elderly people in the case of myalgia in District of Bondowoso.

**Keywords:** traditional massage; myalgia; elderly

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### INTRODUCTION

#### Background

Myalgia is a symptom from most of diseases and disturbance of body. The main cause that raises myalgia is improper usage of muscle or too tensely muscle condition. The excessive usage of muscle is able to cause lack of oxygen to the painful muscles, then, it rises to a process of anaerobe oxidation which delivers to lactic acid. This lactic acid will then emerge painful muscle. If this disease remains persistently to elderly people, it is able to cause frustration, since it could be obstacles in work and other daily activities. In return, it would reduce the life quality of myalgia patients. Myalgia is considered into one of the most pain complaints that often suffered particularly by the elderly clients<sup>(1)</sup>.

In Bondowoso District, myalgia is a health problem which has very high number of certainty. Myalgia is on the top five of disease, specifically is positioned on fourth rank (7.21%) after the number of diarrhoea

(10.03%), hypertension (8.65%), and respiratory tract disorder (7.25%). It is found from the data of patient visit in Puskesmas of Bondowoso District, especially in the case of myalgia, the average per month is about 152 patients (37.24%). Some patients of myalgia stated that they sometime consume painkiller medicine for a long time. This consumption might produce risk of side effects if it is over-consumed or not due to doctor's prescription, for instance obstacle of erythrocyte formation, gastritis, or porous bone<sup>(1)</sup>. Those side effects from chemical medicines cause to the patients of myalgia to have non-pharmacological therapy. Based on the survey, it is indicated that 91% of myalgia patient had to have the therapy of non-pharmacology in order to manage the symptoms. The example of non-pharmacological therapy is empirical traditional health service, traditional massage<sup>(2)</sup>.

According to theory of Endorphins, traditional massage refers to a condition when human body reacts by secreting endorphin through massage. Endorphin is a natural fluid production from the human body, which works and has effect as morphine does. Endorphin is calming, giving sense of comfort, and taking role as to generate cells which aims to fix broken body organ. Besides, the massage is able to cure stress and insomnia, to make muscles and soft tissue of body more relax and stretch. In short, the utilization of health service in the form of empirical traditional massage on elderly patients can overcome the complaints of myalgia in District of Bondowoso in approximately 1.75% or about 86 clients per month<sup>(3)</sup>. If it is compared to the number of elderly patient visit in Puskesmas in similar complaint, the number of clients who benefited traditional massage is lesser.

According to theory of Anderson in his research, the utilization of health service is influenced by three factors:

1. Pre-disposition factor

Pre-disposition factor describes that every individual has tendency to utilize different kind of health service. This condition refers to individual characteristics like demographic characteristics (age & gender), social structure (education, occupation, and belief/culture).

2. Probability factor

Probability factor describes that even though each individual has predisposition to utilize the health service, certain individual might not will to use the health service, except he/she is capable to use it. The ability of each individual to use the health service could be depended on status of economy/income, adequacy of health service facilities, affordability of service distance, health service officials, and health service quality.

3. Need factor

The pre-disposition and probability factor which aim to ask for medical treatment could be realized in an action, as long as it is considered as a client need. The condition of individual health status raises a need and decision to either look for any help assistance or not. The actualization from this individual need is named as a demand<sup>(4)</sup>. In another word, need means as a basic and direct stimulus to utilize any health services, as long as the factor of pre-disposition and probability existed<sup>(5)(6)</sup>. The factor of need comprises of factor of individual perception/ assessment and factor of clinical assessment like physical defect, symptom, or diagnosis.

Due to the Anderson theory, the utilization of traditional health service specifically traditional massage on elderly clients in order to overcome complaints of myalgia is affected by factors of pre-disposition, factor of probability, and factor of need. Based on considerations mentioned previously, to be able to identify the factors that might be related to the traditional massage utilization on elderly clients, which particularly in case study of myalgia and approach of Anderson theory in Regional District of Bondowoso, this research is worth to accomplish.

## Purpose

The objectives of research are to analyze which factor of probability and factor of need is related to the utilization of traditional massage on elderly clients, specifically in the case of myalgia in Regional District of Bondowoso by exerting theory of Anderson.

## METHODS

This research was categorized into analytic quantitative research. This research was conducted with a cross sectional approach with a population of elderly who have complaint of Myalgia, based on the data of elderly patient visit number to public health center along 2018 in about 45,729 people. This research sample was determined by a formula of sample calculation according to Taro Yamane & Slovin<sup>(5)</sup>.

Based on the formula, it indicates that the total sample is 110 informants. The selection of informants is done through technique of purposive sampling, where the informants are selected based on the compatibility and

sufficiency principle to be matched to the research requirement<sup>(4)</sup>. The determination of informants on each hospital is executed proportionally in the case of myalgia complaint and is then divided by the total case in all hospitals, and is timed to the sample need which has been previously calculated in the formula of sample calculation.

$$n = \frac{N}{(N \cdot d^2) + 1}$$

n : Sample size

N : Population size

d<sup>2</sup> : Precision (determined in 10% or 0.1 by the level of certainty 95%)

These are the inclusion criteria of informant:

- Elderly client who has complaint of myalgia symptom (age > 60 years old, calculated since January, 01, 2019);
- Elderly client who has traditional massage in maximum of two months before the time of questionnaire answer and/or after being diagnosed as having myalgia on January and February 2019;
- Willingly to be a research informant.

Elderly who cannot read and write and are willing to become informants are not used as (exclusion criteria).

The independent variable of research comprises of factor of probability (status of economy/income, information, service affordability (distance), health service facility, service quality) and factor of need (symptom), while, the dependent variable is the utilization of traditional massage. Data collection is done by asking informants to fill out the questionnaire about utilization of traditional massage as one of health services to cure myalgia. Data analysis using logistic regression analyze by utilizing computerization system of Statistical Product For Service Solution (SPSS) 22.0 software.

Descriptive analysis aims to depict the frequency distribution and percentage of each independent variable, as they are economic status (income), information, service affordability (distance), health service facility, health service quality, and symptom, whereas the dependent variable is utilization of traditional massage. Bivariate data analysis was employed by exerting chi square test ( $\chi^2$ ) in order to identify the correlation between the independent variable and dependent variable

## RESULTS

The results of this research were are 69 informants using traditional massage, while 41 informants do not do the same. The most informant characteristic is female gender, is about 70 informants (63.6%), since when the primary data is taken, the researchers meet the female informants more than the male. At this period of time, the male informants usually worked outside home. The age of informant mostly in the range of 60-65 years old 36 informants (32.7%), the information occupation is mostly housewife 46 informants (41.8%). Based on the most tribe/culture which are found in this research is Madura Tribe 69 informants (62.7%), while the last educational level is mostly graduation of Senior High School – University 52 informants (47.3%).

### Factor of Probability that Elderly Clients are Related to the Utilization of Traditional Massage in case of Myalgia in District of Bondowoso

The probability factors which were analyzed in this research comprise of income per month, information, distance reach-ability, infrastructure, and service quality of traditional massage. This factor analysis aims to examine the factors that might enable informants to utilize traditional massage in order to overcome the case of Myalgia in District of Bondowoso.

Based on the table of frequency distribution, the total informant who earned income per month less than 1,801,406 was about 45 people (40.09%) and informant who earned income per month less than 1,801,406 was about 65 people (59.01%). Second, the factor of information which is obtained by the informant relating to traditional massage to overcome myalgia, based on the frequency distribution, who did not know about this information was about 42 people (38.02%) and who stated to know about this information was about 68 people (61.08%). Third, the factor of distance reach-ability between informant and traditional massage, who stated

having far and hard distance was about 17 people (15.05%) and who stated it as easy was about 93 people (84.05%). Next, due to the factor of infrastructure of traditional massage service, the informant who claimed to uncompleted standard of infrastructure was about 48 people (43.6%) and who claimed it as completed standard of infrastructure was about 62 people (56.4%). Last, the factor of service quality, the informant who admitted to disqualified traditional massage was about 45 people (40.09%) and who admitted to qualified one was about 65 people (59.01%).

Table 1. Distribution of probability factor

Variable	Criteria	Frequency	Percentage
Income per month	< 1,801,406	45	40.09
	> 1,801,406	65	59.01
	Total	110	100
Information	Unknowledgeable	42	38.02
	Knowledgeable	68	61.08
	Total	110	100
Distance reachability	Hard	17	15.05
	Easy	93	84.05
	Total	110	100
Infrastructure	Uncompleted	48	43.6
	Completed	62	56.4
	Total	110	100
Service Quality	Disqualified	45	40.09
	Qualified	65	59.01
	Total	110	100

Tabel 2. Cross tabulation of income per month factor to traditional massage utilization on elderly clients in case of myalgia

Utilization of Traditional Massage	Income Per Month				Total
	< 1,801,406		> 1,801,406		
	n	%	n	%	
Do not Utilize	25	22.7%	16	14.5%	41
Do Utilize	20	18.2%	49	44.5%	69
Total	45	40.9%	65	59.1%	110
X <sup>2</sup> Test (α = 0.05)		df = 1		p-value = 0.001	

Informant who do not utilize traditional massage on case of myalgia while earned monthly income less than 1,801,406 was about 25 informants (22.7%), while the informant who earned monthly income more than 1,801,406 was 16 informants (14.5%). The informant who utilized traditional massage to overcome complaint of myalgia and earned monthly income less than 1,801,406 was about 20 informants (18.2%), while the informant who earned monthly income more than 1,801,406 was 49 informants (44.5%). Based on the analysis result of chi square test by exerting SPSS 22.0 version, it shows p value = 0.001 and α = 0.05 which means that there was a relation between factor of income per month and utilization of traditional massage on elderly

patients in case of myalgia. Furthermore, Odd ratio = 0.099, which means that the informants who have higher income has probability over 0.099 times higher to utilize traditional massage to overcome myalgia.

Table 3. Cross tabulation of information factor related to traditional massage on elderly clients in case of myalgia

Utilization of Traditional Massage	Information				Total
	Don't know		Know		
	n	%	n	%	
Don't utilize	34	30.9%	7	6.4%	41
Do Utilize	8	7.3%	61	55.5%	69
Total	42	38.2%	68	61.8%	110
X <sup>2</sup> Test (α = 0.05)	df = 1		p-value = 0.000		

According to the table 3, it indicates that the elderly clients as research informants who did not utilize traditional massage in case of myalgia as well as they did not know the benefit of traditional massage was about 34 informants (30.9%), while the informants who knew about this traditional massage was only about 7 informants (6.4%). The informants who utilized traditional massage to overcome myalgia, but did not know about the benefit itself was about 8 informants (7.3%), while the informants who knew about the benefit of this traditional massage was about 61 informants (55.5%). From the analysis result of chi square test by exerting SPSS 22.0 version, it shows p value = 0.000 and α = 0.05 which means that there was a relation between factor of information and traditional massage utilization on those elderly informants in the case of myalgia. Further, the Odd ratio = 8.145, it indicates that the informants who knew about the information related to traditional massage had higher possibility about 8.145 to utilize traditional massage in order to overcome myalgia.

Table 4. Cross tabulation of distance reach-ability factor to traditional massage utilization on elderly clients in case of myalgia

Utilization of Traditional Massage	Distance Reach-ability				Total
	Hard		Easy		
	n	%	n	%	
Don't utilize	13	11.8%	28	25.5%	41
Do utilize	4	3.6%	65	59.1%	69
Total	17	15.4%	93	84.6%	110
X <sup>2</sup> Test (α = 0.05)	df = 1		p value = 0.000		

Based on the table 4, it implies that the total informant who did not utilize traditional massage in case Myalgia and had hard distance reach-ability was about 13 informants (11.8%), while who had easy distance reach-ability was about 28 informants (25.5%). The informants who utilized traditional massage to overcome Myalgia and had hard distance reach-ability was about 4 informants (3.6%), while who found easy distance reach-ability was about 65 informants (59.1%). Due to the analysis result of chi square test by exerting SPSS 22.0 version, it shows p value = 0.000 and α = 0.05 which means there was a relation between factor of distance reach-ability and traditional massage utilization on elderly patients in case of myalgia. Furthermore, the odd ratio = 0.655, it indicates that the informants who had easy distance reach-ability might have chance 0.655 higher to utilize traditional massage in order to overcome myalgia.

Table 5. Cross tabulation of infrastructure factor to traditional massage utilization on elderly clients in case of myalgia

Utilization of Traditional Massage	Infrastructure				Total
	Don't fill a demand		Do fill a demand		
	n	%	n	%	
Don't utilize	38	34.55%	3	2.73%	41
Do utilize	10	9.09%	59	53.64%	69
Total	48	43.64%	62	56.36%	110
X <sup>2</sup> Test ( $\alpha = 0.05$ )	df = 1		p value = 0.000		

Based on the table 5, it indicates that the informants who did not utilize traditional massage in case of myalgia as well as stated uncompleted infrastructure of traditional massage was 38 informants (34.55%), while the informants who stated completed infrastructure of traditional massage was 10 informants (9.09%). Next, the informants who utilized traditional massage to overcome myalgia, but stated that the traditional massage has incomplete infrastructure was 3 informants (2.73%), while the informants who stated that traditional massage already completed the infrastructure was 59 informants (53.64%). According to the analysis result of chi square test by exerting SPSS 22.0 version, p value = 0.000 and  $\alpha = 0.05$  which means there was a relation between factor of infrastructure and traditional massage utilization on elderly clients in case of myalgia. Further, the odd ratio = 22.558, it indicates that the informants who stated that the traditional massage infrastructure was already completed have chance 22.558 higher to utilize traditional massage to overcome myalgia.

Based on the table 6 of cross tabulation above, it indicates that the total informants who did not utilize traditional massage in case of myalgia by stating bad quality of service was about 37 informants (33.6%), while the informants who stated good quality of service was 4 informants (3.6%). The informants who utilized traditional massage to heal myalgia by stating bad quality of service in the traditional massage place was 8 informants (7.3%), while the informants who stated good quality of traditional massage service was 61 informants (55.5%). From the analysis result of chi square test by exerting SPSS 22.0 version, it shows p value 0.000 and  $\alpha = 0.05$  which means there was a relation between factor of service quality in the traditional massage and utilization of traditional massage on elderly patients in case of myalgia. Further, the odd ratio = 22.982, it indicates that the informants who stated that traditional massage already had good quality of service have chance 22.982 higher to utilize traditional massage to heal myalgia.

Table 6. Cross tabulation of service quality factor to traditional massage utilization on elderly clients in case of myalgia

Utilization of Traditional Massage	Service Quality				Total
	Disqualified		Qualified		
	n	%	n	%	
Don't utilize	37	33.6%	4	3.6%	41
Do utilize	8	7.3%	61	55.5%	69
Total	45	40.9%	65	59.1%	110
X <sup>2</sup> Test ( $\alpha = 0.05$ )	df = 1		p value = 0.000		

**Factor of Need on Elderly Clients Related to Utilization of Traditional Massage in Case of Myalgia in District of Bondowoso**

Factor of need in this research refers to symptoms that emerged when the clients suffered and complained for myalgia. Here is the result which will be mentioned in the table below:

Table 7. Distribution of need factor

Variable	Criterion	Frequency	Percentage
Symptom	Do Disturb	44	40
	Don't Distrub	66	60
	Total	110	100

Table 8. Cross tabulation of need factor to traditional massage utilization on elderly clients in case of myalgia

Utilization of Traditional Massage	Symptom				Total
	Disturbing		Is not Disturbing		
	n	%	n	%	
Don't utilize	35	31.8%	6	5.5%	41
Do utilize	9	8.2%	60	54.5%	69
Total	44	40.0%	66	60.0%	110
X <sup>2</sup> Test ( $\alpha = 0.05$ )	df = 1		p-value = 0.000		

Based on the table 8, it implies that the total informant who did not utilize traditional massage in case of myalgia and felt bothering symptoms was about 35 informants (31.8%), while the informants who did not feel any bothering symptoms was about 6 informants (5.5%). The informants who utilized traditional massage to heal myalgia and felt bothering symptoms from Myalgia was about 9 informants (8.2%), while the informants who did not feel any bothering symptoms was about 60 informants (54.6%). Further, the analysis result of chi square test which exerts SPSS 22.0 version shows that p value 0.000 and  $\alpha = 0.05$  which means there was a relation between factor of need (symptom) and traditional massage utilization on elderly patients in case of myalgia. The odd ratio = 0.224 means that the informants who have need based on the symptoms that emerged during myalgia have possibility 0.224 higher to utilize traditional massage to heal myalgia.

## DISCUSSION

### Factor of Probability Related to Traditional Massage Utilization in Case of Myalgia in District of Bondowoso

Status of economy/income per month could indicate welfare degree of society. A good family income enables informants or family member to obtain more needs like health. The higher level of individual income, in return, it would deliver the higher level of health facility utilization as well as better and more adequate way of infrastructure.

The individual income refers to one of determinants to the access of health service. The financial capability is related to individual capability to pay the health services (service cost, medicine, transportation cost to the health service place, foods which are used to supply nutrition need and other health equipments). On the other hand, a low economic status could be reflected from the status of individual health like, high rate of death and pain, condition of malnutrition, and low accessibility of health maintenance<sup>(4)</sup>.

The individual income is a characteristic to measure individual or family capability to obtain their health services and supplies<sup>(5)</sup>. Moreover, Young and Young Garro (1982) quoted by Rebhan (2009) in his research that society who has low economic level might face difficulties to obtain health services, since the cost of health care does not only covers to medical treatment cost, but also to transportation cost<sup>(5)</sup>.

The information related to traditional massage which is able to overcome myalgia has a big role in decision maker of those elderly patients to take benefit from this traditional massage. By this adequate information related to traditional massage, the informants could have better comprehension related to this traditional treatment. The information here means that the traditional massage is able to overcome myalgia. People who get information related to the benefit of traditional massage might utilize this health service more effectively or intensely to help overcoming myalgia rather than the one who do not get such information.

Information plays a significant role in utilization of health services. In fact, the minimum of health service utilization is caused by several factors including to lack of awareness and knowledge of society. There are varieties of information ignorance, for instance society does not know the place of health service, lack of understanding to the dangers of symptom, or critical condition of disease<sup>(4)</sup>.

Affordability of health service distance also might delimit individual capability and will to look for the services, especially if they have limited access of transportation, difficult communication, and lack of health service places in their region.

The distance becomes one of important factors for the society to utilize the health service. The low rate of health service utilization could be influenced by the distance that should be taken up to get the service. The society tends to utilize the health services near to their living places. The nearer the location of health service they could find, the higher possibility for them to come over and utilize this health service of traditional massage. It is in line with the research data which stated that Ismail who lived in Sub-district of Tellu Limpo, District of Bone showed that there was a relation between factor of distance and health service utilization. It means that the distance of society from home to the health service location affects bigger probability to utilize the facilities of health service. Moreover, if the transportation cost is increasing and is not smoothly, it would trouble the society to get those health services<sup>(7)</sup>.

The traditional massage infrastructure also has a meaningful relation to the society accessibility to get traditional massage utilization, which covers to the safety of materials, massage techniques, and other infrastructures like private room and hand washing facility. The good health service should have a good quality of infrastructure and supporting tools, so the health service is able to support and encourage society's interest to utilize the health service of traditional massage. Based on the Regulation of Health Ministry of Indonesia 61<sup>st</sup> 2016, it states that the traditional health service is only permitted to use safe tools and technologies to the health service implementation, which is also supported and based on the health methods and science. The tools and technologies here are referred to instrument, machine, software, and/or other materials which do not contain any drugs in order to maintain patient health, to prevent and help out complaint, and to recover health as well as to improve life quality of patient<sup>(8)</sup>.

Infrastructure is considered to another unsure which is related to the health service utilization, since this factor is able to influence and determine waiting time to obtain the health service. If the infrastructure in health service place is properly and well- served, the waiting time would be fun and calming for the patients. The comfort place is a quality dimension which could relate to the patient satisfaction to come over and obtain the next health services<sup>(9)</sup>.

The quality dimension of traditional massage service in this research context focuses on the attitude hospitality, and neatness of massager, since they are indirectly related to the patient satisfaction and comfort to utilize the facility of traditional massage. Generally, the quality is able to determine and build satisfaction based on the standards of good service, while qualified health service here is defined as a health service which is able to satisfy every customer or client due to each level of satisfaction. The quality of traditional health service must be guaranteed, so it could increase society's interest to utilize traditional health care of traditional massage.

Health services are referred to as qualified when all society regard that the health service is able to serve well and satisfy the patients<sup>(4)</sup>. Relation between sincere attention which is individually expressed to the patient and effort to understand or comply with the patient's expectation related to the quality of health service<sup>(10)</sup>. Next, according to Robert and Prevost, health service clients, the quality of service is more related to the responsiveness of service provider to fulfil the need of client as well as smooth communication between service receiver and provider<sup>(11)</sup>.

### **Factor of Need on Elderly Clients Related to Traditional Massage Utilization in Case of Myalgia in District of Bondowoso**

The need of health is associated to the symptoms of myalgia. In this context, it relates to the utilization of traditional massage to overcome the emergence of myalgia. An individual would do something or take effort to obtain certain health service, if he/she finds that the need in his/her self requires to any help of health services. The condition of individual health status influences to individual need and requires to decision maker which aims to either take any health services or not. The symptoms which are often found in elderly clients are pain in shoulder, arm, and back area. Those symptoms impact to the disturbance of daily activities.

The symptoms which might appear on clients would encourage them to look for help of health service to overcome those pains<sup>(12)</sup>. The realization from this need is then named as a demand<sup>(4)</sup>. Precisely, the need is a basic and direct stimulus to utilize any health services, as long as the factor of pre-disposition and probability are existed<sup>(13)(5)(6)</sup>.

## **CONCLUSION**

### **Conclusion**

Based on the results, the conclusio are:

1. The factors of probability examined in this research are associated to income per month, information, distance affordability, infrastructure, and service quality of traditional massage. Overall, all variables are

interrelated significantly to the utilization of traditional massage on elderly clients to overcome myalgia in District of Bondowoso.

2. The factor of need (symptom) is regarded to have a meaningful relation to the utilization of traditional massage on elderly clients in case of myalgia in District of Bondowoso.
3. The factor of probability (service quality and information) have bigger determinant to relate to the utilization of traditional massage on elderly clients in case of myalgia in District of Bondowoso.

### Suggestion

Based on the conclusion, the suggestion are:

1. The researchers suggest to the health service institutions to be able to facilitate and improve quality of traditional massage service as an aspect of health service providers which aims to give benefits to all society, especially the elderly patients. This activity could be realized in form of periodic coaching according to PMK 61<sup>st</sup> 2016, traditional massage training with the trainers from Association of Indonesian Traditional Health Massager (AP3I), and improvement on the traditional massager capacity.
2. The researcher hope to all society to be able to raise interest to utilize facilities of traditional massage in order to overcome a variety of light health problems, before having any heavier medical treatment, so the consumption of medical drugs could be minimized, and definitely it does not break the existing norms and traditions as well as not contradict to the health principles.
3. The researchers recommend to the next researchers to use this research finding as a reference in implementation of traditional health service program and next researches, so it could help delivering and involving other possible factors which are related to the utilization of traditional massage.

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