

# CORRELATION OF PUBLIC KNOWLEDGE ON THE USE OF MEDICINE FOR TOOTH PAIN IN THE WORKING AREA OF THE ASAM-ASAM HEALTH CENTER

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## Abstract

Toothache is a disease that usually attacks the pulp tissue or the tissue around the teeth. Toothache can be caused by stimulating activities on the teeth and can also appear spontaneously, causing inflammation of the dental pulp. The correct handling of toothache complains is by using the right medication needed. To analyze the correlation between public knowledge and the use of drugs for toothache in the working area of the Asam- Asam Public Health Center. This research use analytic observational with cross sectional design and sampling technique using purposive sampling. The data collection instrument used a questionnaire google form. Based on research results from respondents knowledge in the category good as many as 16 people (24%), enough as many as 37 people (56%) and less as many as 13 people (20%). The results of the use of drugs for toothache in all respondents is irrational. Spearman rho test results obtained a significance value of  $0.000 < 0.05$ , the correlation coefficient is 0.681 and the direction of correlation is positive. It shows that there is a correlation between public knowledge of the use of medicine for toothache. Based on the results of research that has been carried out, public knowledge relates to the rational use of drugs for toothache. The need for information and education related to the use of drugs for toothache rationally

**Keywords:** Correlation, public knowledge, toothache, toothache drugs

## Introduction

Health is an important part of human life, physically and spiritually healthy. Health that needs to be considered in addition to general body health, is also dental and oral health, because dental and oral health can affect the overall health of the body. Optimal oral and dental health can be achieved by performing regular maintenance (Kusumawardani, E, 2011). Someone who wants to have good health must have good knowledge as well, to improve good health, sufficient knowledge is needed.

Knowledge is the result of knowing and this occurs after someone has sensed an object. Sensing occurs through the human senses, namely, the senses of hearing, sight, smell, feeling and touch. Human knowledge can be obtained through the eyes and ears (Notoatmodjo, 2012). Knowledge is very closely related to education, where it is hoped that with higher education, the person will have wider knowledge. Someone with low education does not mean absolutely low knowledge. A person's knowledge of an object contains two aspects, namely positive aspects and negative aspects. These two aspects will determine a person's attitude, the more positive aspects and objects that are known, it will lead to a positive attitude towards certain objects. One form of health object can be described by knowledge gained from own experience (Wawan, 2010). Knowledge is the basis of behavior, good knowledge will have an impact on behavior. Knowledge is the main factor in the progress of society, which means that whether or not a society advances starts from the attention of the community itself (Rusuli and Daud, 2015). A person's knowledge will be embedded in his mind so that knowledge will affect the way the individual behaves and behaves.

Based on The Global Burden of Disease Study 2016, dental and oral health problems, especially dental caries, are diseases that affect almost half of the world's population (3.58 billion people).

Dental and oral disease is one of the most common diseases in Indonesia. Indonesian people's perception and behavior towards dental and oral health is still bad. The 2013 Basic Health Research (Riskesdas) describes the national prevalence of dental and oral health problems as 25.9% (Kemenkes RI, 2013). Factors that influence this problem are the level of education and socio-economic status of the community which affect the knowledge, attitudes and behavior of the community's healthy lifestyle, especially regarding dental and oral health. Dental and oral health is an integral part of general health so it needs to be improved in order to achieve general health. One of the causes of health problems in the community is behavioral factors or attitudes that ignore dental and oral hygiene (Notoatmodjo, 2014).

South Kalimantan is a province that has quite high dental and oral problems at 36.1%, higher than the national prevalence of only 25.9%. The DMF-T index in South Kalimantan is 7.2 with respective values: D-T= 2.2; M- T= 5.0; F-T = 0.11 which means that the teeth of South Kalimantan residents aged 12 years are damaged, 720 teeth per 100 people (Riskesdas, 2013).

Based on a preliminary study conducted in Asam-Asam Village, the authors distributed questions via Google Form with 15 respondents regarding public knowledge of the use of drugs for toothache in the working area of the Asam-Asam Health Center, Jorong District. The results obtained from questions with 15 respondents showed that 60% of the respondents self-medicated their toothache and 40% of respondents went to the puskesmas, among 15 respondents 53.33% of these respondents used antibiotics with NSAID class drugs to treat toothaches. and 46.67% of respondents only took NSAID drugs, 60% of 15 respondents bought drugs to

treat toothaches they experienced in stalls and 40% of respondents bought drugs at drugstores, Among 60% of 15 respondents kept the medicines they bought at home and 40% of the respondents did not keep medicines at home. Based on the results of the explanation above, the authors are interested in knowing about public knowledge of the use of drugs for toothache in the working area of the Asam-Asam Health Center.

This study aims to analyze the relationship between public knowledge and the use of drugs for toothache in the working area of the Asam-Asam Public Health Center. In addition, this study was also conducted to determine public knowledge about the use of drugs for toothache in the working area of the Asam-Asam Health Center; Knowing the medicine for toothache used in the working area of the Asam- Asam Health Center; and knowing the relationship between public knowledge and the use of drugs for toothache in the working area of the Asam- Asam Health Center. This research is expected to provide a source of information and study materials about public knowledge regarding the use of drugs for toothache and increase knowledge and information for the community.

## **Method**

The location of this research was carried out in the working area of the Asam-Asam Health Center, Jorong District. This study was conducted cross-sectionally in a period from October 2020 to July 2021. The unit of analysis in this study was people aged 17-45 years who experienced toothache in the last 3 months.

The data used in this study is primary data collected by purposive sampling method using google form. The research variables used in this study were the community knowledge variable and the drug use variable for toothache. The analysis used in this research is descriptive analysis and inferential analysis. Descriptive analysis was used to view the sample description of the knowledge and use of medication for toothache variables. Inferential analysis used is Spearman's Rho to see the relationship between variables.

## **Results**

The research was conducted in Asam-Asam Village. Asam-Asam Village is one of the villages in Jorong District, Tanah Laut Regency, South Kalimantan province. This village has an area of 56.00 km<sup>2</sup>. The total population is 4,687 people with 2,284 women and 2,403 men. Asam-Asam Village has health facilities, namely the Asam-Asam Health Center, sub-health centers, independent clinics, pharmacies, drug stores, practicing doctors, practice midwives, posyandu for the elderly and posyandu for toddlers.

### **Respondent Demographic Data**

#### **a. Gender**

The distribution results based on the gender of the respondents obtained are as follows:

Table 1. Distribution by Gender of Respondents

No.	Gender	Frequency	Percentage (%)
1.	Woman	36	55
2.	Male	30	45
	Total	66	100

Based on Table 4.4 shows that the majority of respondents are female as the sample of the study, as many as 36 people (55%).

b. Age

The results of the distribution based on the age of the respondents obtained are as follows:

Table 2. Distribution by Age of Respondents

No.	Age	Frequency	Percentage (%)
1.	17-25 years old	40	61
2.	26- 35 years old	21	32
3.	36- 45 years old	5	7
	Total	66	100

Based on Table 4.5 shows that the majority of respondents with an age range of 17-25 years who became the research sample were 40 people (61%)

c. Last education

The distribution results based on the latest education obtained are as follows:

Table 3. Distribution by Education Level of Respondents

No.	Last education	Frequency	Percentage (%)
1.	SD	6	8
2.	Middle school/equivalent	16	24
3.	High school / equivalent	39	61
4.	D3	1	1
5.	S1	4	6
	Total	66	100

Based on Table 4.6, it shows that the majority of respondents whose last education was SMA/equivalent were 39 people (61%).

### Community Knowledge

The results based on the research that has been done, the knowledge of the community is as follows:

*Table 4 Public Knowledge*

No. About	Indicator	Correct answer	Wrong answer	Total
1	Definition of Toothache	100%	-	100%
2.	How to Avoid Toothache	93.9%	6.1%	100%
3.		93.9%	6.1%	100%
4.		77.3%	22, 7%	100%
6.	Duration of Drug Use	12.1%	87.9%	100%
7.		16, 7%	83.3%	100%
5.	Drug Indication	37, 9%	62.1%	100%
8.		48.5%	51.5%	100%
9.	Medicine Storage	83.3%	16.7%	100%
10.	Side effects	97.0%	3.0 %	100%
11.	Drug Dosage	100%	-	100%

Based on Table 4 shows that most of the respondents have understood the statement about the questionnaire, it can be seen in the answers of the majority of respondents who answered correctly.

The results of the respondent's knowledge category based on the scores that have been obtained are as follows:

*Table 5 Categories of Respondents' Knowledge Level*

No.	Category	Frequency	Percentage (%)
1.	Well	16	24
2.	Enough	37	56
3.	Not enough	13	20
	Total	66	100

Based on Table 5 shows that the majority of respondents have knowledge included in the sufficient category as many as 37 people (56%).

### Use of Medicine for Toothache

Based on the research that has been done, the results of the use of drugs for toothache are as follows:

Table 6 Drug Use

No.	Statement	Answer		Total
		Right	Wrong	
1.	I use antibiotics when I have a bacterial infection	62.1%	37.9%	100%
2.	I use Amoxicillin and Mefenamic Acid to treat toothache in cavities	92.4%	7.6%	100%
4.	I get medicine that I have to take 3 times a day, so I take the medicine every 8 hours	39.4%	60.6%	100%
5.	I chewed the medicine Amoxicillin and Mefenamic Acid to deal with the toothache I was experiencing	100%	-	100%
7.	I take 2 tablets of painkillers at once to relieve pain when I have a toothache without consulting a doctor	63.6%	36.4%	100%
8.	I still take painkillers continuously even though the pain has gone	100%	-	100%
9.	I still take antibiotics (Amoxicillin) according to the doctor's instructions even though it's getting better	9.1%	90.9 %	100%
10.	I use antibiotics & pain relievers to treat a toothache that I experience on the advice of family or friends without checking first with the doctor	30.3%	69.7%	100%
11.	I took the medicine given by the doctor to treat the toothache I was experiencing by using milk	100%	-	100%
12.	When I took medicine for a toothache that I experienced, then unwanted effects occurred, so I stopped using the drug	100%	-	100%

13.	When I take antibiotics not as recommended, it can cause resistance / immunity to antibiotics	10.6%	89.4%	100%
Additional Questions				
3.	I use Mefenamic Acid (Anti-Pain) to treat toothache in cavities	48.5%	51.5%	100%
6.	If within 7 days after taking medicine for toothache in cavities (Antibiotics & Anti-Pain) does not improve then I will consult a doctor again.	65.2%	34.8%	100%

Based on Table 6, the use of drugs for toothache by the community shows that the majority of respondents answered

The results of the category of drug use for toothache based on the scores obtained are as follows:

Table 7 Categories of Drug Use for Toothache

No.	Category	Frequency	Percentage
1.	Rational	0	0%
2.	Irrational	66	100%

Based on Table 7, the results of rational use of drugs are none (0%) and irrational ones are 66 people (100%).

### The relationship between knowledge and the use of drugs for toothache

Based on the research that has been done, the results of the relationship between public knowledge on the use of drugs for toothache using the Spearman Rho test are as follows:

Table 8 Spearman Rho . Analysis

Signification	Correlation Coefficient	Correlation Direction
0,000 < 0.05	0.681	+

Based on Table 8 shows that the significance value obtained is  $0.000 < 0.05$ , it means that there is a significant relationship, while the correlation coefficient value obtained is 0.681, meaning that the level of strength of the relationship between the two variables is strong and the direction of the correlation is positive.

## Discussion

### Demographic Data

Based on the research that has been done by distributing questionnaires via google form to 66 respondents, the results obtained are demographic data of respondents, namely data based on gender, age, and last education. The sample used in this study was the community in the working area of the Asam-Asam Health Center.

a. Gender

The results based on the gender of the respondents during the study were 36 women (55%) and 30 men (45%). Female respondents are more dominant than male respondents. The results obtained are different from the population data in Asam-Asam Village, namely that more people are male than female (Asam-Asam Village Office, 2020). This happened because at the time the research was conducted, the researcher distributed a google form link randomly to respondents who had experienced toothache according to the required sample.

b. Age

This research uses respondents with an age range of 17-45 years. The results based on the age of the respondents that have been obtained at the time of the study with the age of 17-25 years, namely 40 people (61%), age 26-35 years as many as 21 people (32%) and age 36-45 years, namely 5 people (7%) . The majority of respondents in this study were aged 17-25 years.

A person's age affects a person's grasping power and mindset, the older you get, the more a person's mindset and capture power will develop so that the knowledge gained by a person will be more and more (Fitriana, 2017). The results of this study are not in accordance with the statement which states that the older a person is, the higher his knowledge.

Researchers used respondents aged 17-45 years because at that age included in late adolescence and until late adulthood, where the older a person gets, the more a person's grasping power in thinking will increase, so that it will increase the knowledge gained (Budiman and Riyanto , 2013).

c. Level of education

The results based on the last education of the respondents were SMA/SMK/equivalent with a total of 39 people (61%), SMP/equivalent 16 people (24%), SD 6 people (8%), D3 1 person (1%) and S1 as many as 4 people (6 %). These results indicate that the majority of the community's latest education in the working area of the Asam-Asam Health Center is

SMA/equivalent compared to other recent educations. The results obtained are the same as the population data in Asam-Asam Village, where the majority of the people have the latest high school education/equivalent. The results of the study with the respondent's latest education found that the knowledge of respondents who graduated from high school/equivalent knowledge was better than those of D3 and S1 graduates, this was because the researchers found that the sample had more cavities in people with the last education of high school/equivalent.

### **Community Knowledge**

Community knowledge in this study was measured using a questionnaire with 11 questions about public knowledge about toothache. The answer choices used in this questionnaire are true and false. Respondents who answered correctly were given a value of 1 while those who answered incorrectly were given a value of 0.

Based on the results obtained that the majority of respondents answered the questions correctly, compared to respondents who answered the wrong questions on the public knowledge questionnaire. The question with the highest correct answer as much as 100% in question number 11 about drug dosage, respondents know that the drug must be taken as recommended by the doctor. The next question in question number 1 is 98.5% of respondents answered correctly about the definition of toothache and 1.5% of respondents answered incorrectly, this shows that respondents know that toothache is not a hereditary disease. Question number 10 about drug side effects, respondents answered correctly as many as 97.0% and answered incorrectly as much as 3.0%. This shows that the majority of respondents know that any adverse or unexpected effects when taking drugs are side effects of drugs. Questions number 2 and 3 are how to avoid toothache,

The next question in question number 9 is how to store drugs, respondents answered correctly as many as 83.3% and answered incorrectly as much as 16.7%. This shows that the majority of respondents know that drugs must be stored in a place that cannot be reached by children and protected from direct sunlight. Next on question number 4 Regarding the use of anti-pain medication, respondents answered correctly as much as 77.3% and answered incorrectly as much as 22.7%. The results show that the majority of respondents know that anti-pain medication can be discontinued when the pain has disappeared, this is in line with research conducted by Khuluq and Zukhruf (2019) which states that 80% of respondents think they should not use anti-pain continuously. Question number 8 as many as 48.5% of respondents answered correctly and 51.5% of respondents answered incorrectly about drugs taken after

eating are more effective if taken 2 hours after eating, this is in line with research conducted by Jefrin Sambara, et al (2014) in Kupang City only 24.7% of respondents stated it was true, for them waiting 2 hours after eating to take medicine is too long, even though 2 hours after eating is an effective time for the digestive system to be able to digest food properly, before finally digesting the drug. Question number 5 about antibiotics should only be used if they have a bacterial infection, 37.9% of respondents answered correctly and 62.1% of respondents answered incorrectly. This shows that the majority of respondents do not know that antibiotics are drugs for bacterial infections, in line with research conducted performed by Pratomo and Dewi (2018) shows that only a small part, namely 22.01% of respondents know that antibiotics are drugs for bacterial infections.

Question number 7 the use of antibiotics must be spent, as many as 83.3% of respondents answered incorrectly and 16.7% of respondents answered correctly. This shows that the majority of respondents do not know that antibiotic drugs must be spent even though the pain is felt to have healed, this is in line with research by Pulungan (2017) where only 34.3% of respondents understand that antibiotics should not be used when the pain is felt to be improving or recovering.

The last question in question number 6 regarding the use of antibiotics may be discontinued if the pain is felt to have healed, respondents answered incorrectly as much as 87.9% this shows that there are still many respondents who do not know that the use of antibiotics is not like other drugs whose use can be discontinued when the pain is felt healed. This is in line with research by Pulungan (2017) where only 34.3% of respondents understand that antibiotics should not be used when the pain is felt to be improving or recovering.

Based on the results that have been obtained respondents have the right knowledge of 11 questions there are 7 questions answered correctly, then the level of knowledge of each respondent is obtained by the formula:

$$\% \text{ Statements answered correctly} = \frac{\text{pernyataan yang dijawab benar}}{\text{skor total}} \times 100\%$$

The results obtained are then grouped into (Arikunto, 2010):

- a. Good knowledge = 76%
- b. Sufficient knowledge = 56-75%

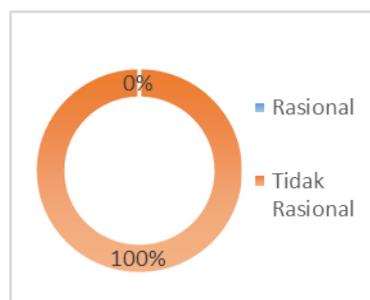
c. Lack of knowledge = 56%

The results of the level of knowledge of the respondents obtained are in the good category as many as 16 respondents (24%), the sufficient category as many as 37 respondents (56%) and the less category as many as 13 respondents (20%), from these results indicate that the highest category is enough category. These results indicate that most of the questions cannot be answered correctly by the respondents, so that the majority of respondents have sufficient knowledge about medicine for toothache, this shows that the public knows enough about knowledge about toothache.

**Drug Use**

The use of drugs for toothache by the community in this study was measured using a questionnaire with 13 statements and 7 indicators of rationality according to the Ministry of Health of the Republic of Indonesia 2011 namely about the right indication, the right dose of use, the right time interval of use, the right duration of use, the right way to use, the right side effects, the right information and the researcher also added 2 additional questions. The answer choices in this questionnaire use yes and no answers. Respondents who answered correctly were given a value of 1, while respondents who answered incorrectly were given a value of 0.

Based on the results obtained from the questionnaire statement on the use of drugs for toothache, the results obtained from the use of drugs for irrational toothache are as follows:



*Figure 1 Medication Use Diagram for Toothache*

Based on Figure 1, the categories of drug use for toothache are irrational

**The Relationship of Knowledge to the Use of Drugs for Toothache**

Based on the research that has been done, the results of the relationship between public knowledge and the use of drugs for toothache using the Spearman Rho test in SPSS version 22. Based on the results of the Spearman Rho analysis, the significance value is  $0.000 < 0.05$ , which means that there is a significant relationship. This is in line with the hypothesis that  $H_0$  is rejected. Furthermore, the correlation coefficient value obtained is 0.681, meaning that the level of strength of the relationship between the two variables is strong and has a positive value. The results of the positive correlation coefficient obtained in this study indicate that if the value of the knowledge variable is greater, the value of the use variable will also increase. Because the greater the value of a variable, the greater the value of the other variables (Dahlan, 2014).

### **Conclusion**

Based on the results of the research obtained and which have been carried out to the community in the working area of the Asam- Asam Public Health Center, Jorong District, related to the relationship between public knowledge and the use of drugs for toothache in the working area of the Asam- Asam Public Health Center, namely: 1. Public knowledge of the use of drugs for toothache is included in the sufficient category as many as 37 people (55%) consisting of 19 women and 18 men; 2. The drugs used to treat toothache in cavities in the working area of the Asam-Asam Public Health Center are Amoxicillin and Mefenamic Acid; 3. The relationship between public knowledge and the use of drugs for toothache in the working area of the Asam-Asam Health Center, the significance value is  $0,000 < 0.05$ , the correlation coefficient is 0,681 with a positive correlation direction, which means that there is a significant correlation between the two variables connected, the category and unidirectional correlation.

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### **Declaration of Interest Statement**

The authors declare that they have no conflict of interests.

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