

Original Research Article

RABIES PREVENTIONS IN HUMANS IN THE WORKING AREA OF EAST TOMONI PUBLIC HEALTH CENTER

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Abstract

Background: Rabies is a deadly disease that is transmitted from animals to humans and attacks the central nervous system (WHO, 2016). Data reported by the World Animal Health Organization (OIE) revealed that the global human death rate due to rabies is almost 70 thousand per year. In other words, every ten minutes one person in the world dies from the virus.

Objectives: This study aimed to find out the knowledge and prevention of rabies carried out by the community around the East Tomoni Public Health Center.

Methods: This study was conducted in the working area of East Tomoni Public Health Center by involving 390 participants in August 2020. Data was collected using simple random sampling. The instrument of this study is questionnaire. Statistical test method used to know independent variables are univariate analysis and bivariate analysis.

Results: The majority of good knowledge as much as 351 (90%) respondents were less Knowledge while 39 (10%) respondents. Good attitude as many as 318 (81.5%) Respondents have a pretty good attitude as many as 72 (18.5%) Respondents. Good rabies prevention measures were 347 respondents (88.9%) while those who had less rabies prevention measures were 43 (11.02%) respondents. The results of the study using the *Pearson Chi-Square* test showed that the level of knowledge was $p\text{-value} = 0.000$ ($\alpha < 0.05$) means there is a relationship between the level of knowledge and rabies prevention measures in the work area of the Tomoni Timur Public Health Center, whereas, the attitude with the *Pearson Chi-Square* test shows that the attitude of $p\text{-value} = 0.000$ ($\alpha < 0.05$) means that there is a relationship between attitude and rabies prevention measures in the working area of the Tomoni Community Health Center.

Conclusion: There is a relationship between knowledge and attitudes of the community and rabies prevention in the East Tomoni Community Health Center.

Keywords: Knowledge, attitudes, rabies prevention.

INTRODUCTION

Rabies is a deadly disease that is transmitted from animals to humans and attacks the central nervous system (WHO, 2018). Data reported by the World Animal Health Organization (OIE) reveals that the global human death rate due to rabies is nearly 70 thousand per year. In other words, every 10 minutes one person in the world dies from the virus. OIE further explained that about two thirds of the countries in the world are currently still affected by rabies. Especially in developing countries, the virus mostly affects children under 15 years of age. According to a report by the UN *World Health Organization*, WHO (*World Health Organization*), there are more than 1.4 billion people at risk of being infected with rabies in this region. Every year, 23 thousand to 25 thousand people die from rabies in Southeast Asia. "This figure accounts for about 45 percent of human deaths due to rabies worldwide (WHO, 2005).

Ten countries that are members of ASEAN (including Indonesia) at the 34th Meeting of the Ministers of Agriculture and Forestry (*the thirty fourth meeting of the ASEAN ministers on Agriculture and forestry*) on 27 September 2012 in Vientiane, Lao PDR has agreed and declared to be free of rabies in 2020 (Kementerian Kesehatan RI, 2020).

Rabies control is generally carried out by vaccinating stray dogs, in addition to socialization and traffic monitoring programs for *Hew* Transmitter Rabies (HPR). But rabies eradication depends not only on the dog problem, but also on the human problem. Basically, the success of controlling and eradicating rabies depends on the level of public understanding of rabies. To support this program, it is necessary to carry out efforts to eradicate rabies in an appropriate and targeted manner. Most of the sources of rabies transmission to humans in Indonesia are caused by the bites of dogs infected with rabies (98%), and others by monkeys and cats. Rabies infection in both animals and humans that has shown clinical signs and symptoms in the brain (*Encephalomyelitis*) ends in death. There is

only one sufferer living in the world. In Indonesia alone, the average rabies animal bite cases were 78,147 cases in 2018, which were spread over 24 provinces. (Ministry of Health of the Republic of Indonesia, 2018).

In South Sulawesi, there were 570 positive rabies cases in 2019. This incidence was bigger in 2018. In 2018 there were 6175 cases of GHPR and 15 cases positive for rabies (Dinkes Sul-Sel, n.d.).

The high population of domesticated livestock, especially dogs, has resulted in an increase in cases of infectious rabies bites (GHPR) in East Luwu Regency in the last six years, namely 2014-2019. Data from the zoonosis/ rabies Komda of East Luwu Regency, which refers to reports from each Puskesmas, shows that the trend of increasing GHPR cases from year to year has increased significantly. For 2014, cases of Infectious Rabies Animal Bites (GHPR) in East Luwu district reached 407 cases with one Rabies case, 2015 increased to 465 GHPR cases, 2016 increased again to 467 and 2 cases of Rabies, 2017 increased again to 525 cases and 3 cases of Rabies were detected, in 2018 it increased to 557 cases of GHPR and in 2019 increased to 628 cases of GHPR and 1 of Rabies. Meanwhile for 2020, in January-February GHPR cases have reached 43 cases and 1 patient died. Rabies Transmitted Animal Bites (GHPR) in East Luwu Regency are scattered in almost all districts, although in a different number of cases. East Tomoni Subdistrict is recorded as being the first with the most GHPR cases, and then followed by Wasuponda Subdistricts, Angkona Districts, M Transportana and Burau District. With the increase in cases of GHPR from year to year, and some even die, East Luwu can be categorized as Endemic Rabies (Dikes Luwu Timur, n.d.).

East Tomoni Subdistrict, with the number of GHPR incidents in 2018 as many as 67 cases, in 2019 as many as 141 cases, and in 2020 January-May as many as 99 cases (Medical Record of the East Tomoni Health Center, 2020). Based on the description above, the authors are interested to find out the knowledge

and prevention of rabies carried out by the community around the East Tomoni Public Health Center.

METHODS

Study Design

The research method used is a descriptive survey research method, which is a study conducted to describe or describe a phenomenon that occurs in society (Notoatmodjo, 2010).

Setting

This research has been carried out in the East Tomoni Public Health Center. This research was conducted from June 8 to August 8, 2020.

Research Subject

The population in this study were all people in the working area of East Tomoni Health Center. A total of 15,424 inhabitants. The samples in this study were 390 people. The sample size in this study was calculated using the Slovin formula) with a confidence level of 90%. The sampling technique is Simple Random Sampling, which is a random sampling of members of the population without paying attention to the strata in the population (Sugiyono, 2017).

Instruments

Data collection was carried out by giving approval question sheets to respondents and after that distributing questionnaires and explaining how to fill them out to the community by visiting residents' homes while still paying attention to health protocols.

Knowledge questionnaire consists of 10 questions covering the understanding of rabies, symptoms or signs of humans and animals infected with rabies, causative factors, infectious animals, modes of transmission, methods of preventing rabies, and first aid methods in the event of a bite. The Attitude Questionnaire consists of 10 questions which include statements related to the prevention of rabies, including good dog care, and first aid in

the event of a bite of a rabid animal. Meanwhile, the Rabies Prevention Action Questionnaire consists of 10 questions covering how to properly care for a dog, and how to provide first aid in the event of a bite by an animal that transmits rabies.

This questionnaire was adopted from the research of Ayu Septiani Bachelor (2014) and has been tested for Validity n Reliability and modified according to research variables.

Data Analysis

The data analysis technique in this study used univariate analysis and bivariate analysis using the chi square test, which is to find out which independent variables have a relationship to rabies prevention. If the P value > 0.05 then H₀ is accepted and vice versa if the P value < 0.05 then H_a is accepted.

Ethical Consideration

Before doing research, the researcher asks for permission first from the Investment and One Stop Service Office with the research permit recommendation number 066/DPMP/VI/2020. After that the recommendation was given to the East Tomoni Health Center for follow-up and the researcher was given a research recommendation letter with no. 445/112/PKM-TMT/VI/2020 and the Researcher Continues to the Research Stage. After completing research and providing research results to the East Tomoni Health Center and the Health Center Party Provide a Certificate of Having Conducted Research with Letter number 445/1064/PKM-TMT/VIII/2020.

RESULTS

Characteristics of Research Sites

East Tomoni Community Health Center is one of the Puskesmas in East Luwu Regency which is located in Patengko Village, East Tomoni Subdistrict, East Luwu Regency, South Sulawesi Province. The East Tomoni Community Health Center has a work area of 8 villages, namely: Alam Buana Village, Cendana Hitam Village, Cendana Hitam Timur

Village, Kertoraharjo Village, Manunggal Village, Margomulyo Village, Patengko Village, Purwosari Village.

East Tomoni Subdistrict is the second sub-district with the smallest area in East Luwu Regency, with an area of 43.91 km² or about 0.63% of the total area of East Luwu. This sub-district, which is located in the west of the capital city of East Luwu Regency, is in the north directly adjacent to the M Transportana and Kalaena Districts. In the east, it is bordered by Angkona and Wotu Districts. To the south is Wotu District, while in the west is Tomoni District. East Tomoni Subdistrict consists of 8 villages, all of which have definitive village status.

The area of East Tomoni Subdistrict is an area where all the villages are non-coastal areas. Topographically, the East Tomoni Subdistrict is a flat area. Government In 2019, East Tomoni Subdistrict has 24 hamlets with 80 neighborhood units. According to the village, the population density level in East Tomoni District is around 299 people per square kilometer. The most densely populated village is Purwosari Village with a density of up to 629 people per square kilometer, while the lowest is Cendana Hitam Timur Village with a density of around 185 people per square kilometer while the number of households is 3,679 with a density of 4 people per household.

Characteristics of Respondent

The results of Table 1 showed that of the 390 respondents, the majority of respondents were 20-40 years old as many as 248 (63.6%) respondents, aged 41-60 years were 128 (32.8%) respondents, aged <20 years were 12 (3.1%) respondents, > 60 years as many as 2 (0.5%) respondents. the characteristics of the respondents are based on education from 390 respondents, the majority of high school education or equivalent are 164 (42.1%) respondents, junior high school education is 132 (33.8%) respondents. Elementary education as many as 89 (22.8%) respondents, S1 education as many as 5 (1.3%) respondents.

Table 1. Distribution of Respondents in the Work Area of East Tomoni Health Center.

Characteristics of Respondent	Frequency	Percentage
	(f)	(%)
Age (years)		
< 20 years	12	3.1
20-40 years	248	63.6
41-60 years	128	32.8
> 60 years	2	0.5
Total	390	100.0
Educational Level		
Elementary School	89	22.8
Junior High School	132	33.8
Senior High School	164	42.1
College/ University	5	1.3
Total	390	100.0

Sources: Primary Data of Questionnaire, 2020.

Correlation between Knowledge Level, Attitude, and Rabies Prevention Measures using Chi-Square Test

Table 2 showed that from 390 (100%) Respondents. Respondents with good knowledge and good rabies prevention measures were 323 (82.8%) respondents. Respondents with Good Knowledge and Rabies Prevention Measures Lacking 28 (7.2%) Respondents. Respondents who lacked knowledge and good rabies prevention measures were 24 (6.2%). And respondents who lacked knowledge and less rabies prevention measures were 15 (3.8%) respondents. Respondents with good attitude and good rabies prevention measures were 294 (75.4%) respondents. Respondents with Good Attitude and Rabies Prevention Measures Lacking 24 (6%) Respondents. Respondents with Good Attitude and Good Rabies Prevention Measures were 53 (13.6%). There were 19 respondents (5%) who had a pretty good attitude and rabies prevention measures.

Based on the results of the study, it was found that there was a relationship between knowledge level and rabies prevention measures (p -value .000). In addition, the results of this study found that there was a relationship

between attitude and rabies prevention measures (p -value .000).

Table 2. Correlation between Knowledge Level, Attitude, and Rabies Prevention Measures in the Work Area of East Tomoni Health Center.

Rabies Prevention Measures	Knowledge Level				Attitude			
	Good		Less		Good		Pretty Good	
	F	%	F	%	F	%	F	%
Good	323	82.8	24	6.2	294	75.4	53	13.6
Less	28	7.2	15	3.8	24	6.1	19	4.9
Total	351	90.0	39	10.0	318	81.5	72	18.5
p -value	.000				.000			

Sources: Primary Data of Questionnaire, 2020.

DISCUSSION

Relationship Knowledge Level and Rabies Prevention Measures

Knowledge is the result of human senses, or the result of a person's knowing of objects through their senses (eyes, nose, ears, etc.). Most of a person's knowledge is obtained through the sense of hearing (ears) and the sense of sight (eyes) (Notoatmodjo, 2014).

Prevention is an act of activity from the human being himself which has a very wide scope, among others: walking, talking, crying, laughing, working, studying, writing, reading and so on. From this description it can be concluded that what is meant by human behavior is all human activities or activities, both those that are directly observed and those that cannot be observed by outsiders (Notoatmodjo, 2010). Rabies prevention is the act of reducing the risk of exposure to animals infected with the rabies virus.

The results of research in the field indicate that most respondents have a relatively good level of knowledge, namely good knowledge of 351 (90%) of respondents. And 39 (10%) respondents lack knowledge about rabies.

From 390 (100%) Respondents. Respondents with good knowledge and good rabies prevention measures were 323 (82.8%) respondents. Respondents with Good Knowledge and Rabies Prevention Measures Lacking 28 (7.2%) Respondents. Respondents who lacked knowledge and good rabies

prevention measures were 24 (6.2%). And respondents who lacked knowledge and less rabies prevention measures were 15 (3.8%) respondents. Thus, outreach efforts to the public are still carried out to continue to increase respondents' knowledge and awareness of the dangers of rabies in order to increase their participation in preventing rabies. In this study, it shows that public knowledge about rabies, which means that health workers have maximized efforts in providing health education, it's just that the behavior and culture of the community in the work area of East Tomoni Public Health Center, the majority of which still chooses dogs and even almost every house has a dog so that the GPHR figure is not yet can be pressed to the maximum. Therefore, government participation is needed to provide vaccination to these maintenance dogs.

The results of this study were tested using the *chi-square* test with the results of statistical tests using the *Pearson Chi-Square* test, the results obtained were p -value = 0.000, at the 95% confidence level or $\alpha = 0.05$. Because p -value < 0.05, then H_a is accepted and H_0 is rejected. That is, there is a relationship between the level of knowledge and the prevention of rabies in the community in the East Tomoni Public Health Center in 2020.

The results of this study are in line with the opinion of (Notoatmodjo, 2010), that a person's actions towards health problems, in this case community participation in rabies prevention

programs, will basically be influenced by knowledge of the problem. Knowledge is a very important domain in shaping one's actions, in this case the respondent's participation in rabies prevention programs. Likewise, the opinion of Andersen quoted by (Notoatmodjo, 2010), which states that knowledge will more or less influence a person in certain consequences from the consequences of the actions taken.

The results of this study are also in line with Manoi Evart Simon's research entitled *The Relationship between Knowledge Levels and Community Attitudes with Rabies Prevention Behavior in Bantik Village, Beo District, Talaud Regency*. Based on the results of the *Chi - Square* analysis, the p value for the relationship between the level of knowledge and preventive behavior is $p = 0.001$ and the p value for the relationship between attitude and preventive behavior is $p = 0.008$ with a significance level of $p = <0.05$, this indicates that there is a relationship between the level of knowledge and attitudes. community with rabies prevention behavior (Monai, Panjaitan, & Langelo, 2015).

Relationship Attitude and Rabies Prevention Measures

According to (Notoatmodjo, 2014) attitude is also a person's closed response to a certain stimulus or object, which already involves the opinion and emotional factors concerned (happy-displeased, agree-disagree, both bad and so on).

Prevention is an act of activity from the human being himself which has a very wide scope, among others: walking, talking, crying, laughing, working, studying, writing, reading and so on. From this description it can be concluded that what is meant by human behavior is all human activities or activities, both those that are directly observed and those that cannot be observed by outsiders (Notoatmodjo, 2010). Rabies prevention is the act of reducing the risk of exposure to animals infected with the rabies virus.

The results of research in the field showed that most of the respondents had a relatively

good attitude, namely 81.5% (318 respondents), but there were still 18.5% (72 respondents) who were in the fairly good attitude category regarding rabies. Thus, efforts to educate the public and facilitate vaccines will continue to be carried out in order to continue to increase respondents' attitudes and awareness of rabies prevention measures.

From 390 (100%) Respondents. Respondents with good attitude and good rabies prevention measures were 294 (75.4%) respondents. Respondents with Good Attitude and Rabies Prevention Measures Lacking 24 (6%) Respondents. Respondents with Good Attitude and Good Rabies Prevention Measures were 53 (13.6%). There were 19 respondents (5%) who had a pretty good attitude and rabies prevention measures.

The results of this study were tested using the *chi-square* test with the results of the *Pearson Chi-Square* test statistical test results obtained by p -value = 0.000, at the 95% confidence level or $\alpha = 0.05$. Because p -value < 0.000, then H_a is accepted, that is, there is a relationship between attitude and rabies prevention in the community in the Work area of East Tomoni Health Center in 2020 and H_0 is rejected.

According to (Notoatmodjo, 2014) that an attitude has not been automatically manifested in an action. In order to make attitudes into real action, supporting factors or enabling conditions are needed, including facilities and culture or ethnicity. The positive attitude of dog owners requires a vaccination site that is easily accessible and culture or ethnicity influences rabies prevention behavior such as wearing chains and covering their mouths (muzzle), confining pets and killing animals if they are left free outside the house (let alone).

This is according to (Notoatmodjo, 2007), which states that beliefs and customs of belief are very influential in shaping behavior. Tribes provide a value that varies from one another, be it from their habits, lifestyle, relationships and so on.

According to (Wattimena & Suharyo, 2010), one of the attitudes towards preventing

rabies is the attitude towards good dog maintenance. Some important things that must be considered in maintaining a good dog include giving dog food 2-4 times a day, bathing a dog more than once a week, cutting dog nails regularly because nails can become a den of the rabies virus, not cutting dogs for food, dogs be confined indoors or in a fenced yard, vaccinate dogs regularly for rabies, prevent dogs from fighting other animals, and use leash when walking dogs. If the community has a good attitude towards how to raise dogs, this is very helpful in preventing rabies. The results of this study are in line with Erick Hoetama 's research entitled Knowledge, Attitudes, and Community Behavior towards Rabies in Manggarai Regency, East Nusa Tenggara, 2014. Of the 278 respondents, 65.8% of respondents had a low level of knowledge and 34.2% were good. Only 18.3% had a low level of attitude, while 81.7% had a sufficient level of attitude. The level of respondent behavior was 53.2% less and 46.8% sufficient. There is a relationship between the variables of education level and place of residence with the level of knowledge, attitudes and behavior towards rabies. In addition, respondents with a sufficient level of knowledge have good behavior (Hoetama et al., 2016).

The results of this study are inconsistent with empirically n Widya Zahranita The Entitled Relations Public Knowledge and Attitudes About Rabies With Rabies Prevention Measures In urban village Puskesmas Cupak Tengah Pauh. The results showed that more than half of the respondents had good enough knowledge, had a positive attitude and had fairly good actions. The results of the analysis using the *Spearman correlation* test showed a significant relationship between knowledge and preventive measures ($p = 0.000$, $r = 0.232$), but there was no significant relationship between attitudes and preventive measures ($p = 0.09$) (Zahranita, 2016).

CONCLUSION

Referring to the results of research and analysis, the conclusions of this study are 1)

There is a relationship between public knowledge and rabies prevention in the area of East Tomoni Community Health Center; 2) There is a relationship between attitude and rabies prevention in the area of East Tomoni Community Health Center.

SUGGESTIONS

For Respondents to be able to increase knowledge about rabies and the dangers caused by rabies and take rabies prevention measures such as providing rabies vaccines regularly, reporting when bitten by rabies suspect animals to get anti-rabies vaccines, immediately reporting to the livestock office if there are animals with symptoms of rabies and do not let pets outside the yard without supervision.

Health agencies in order to be able to make preventive and promotive efforts to the community to increase knowledge and insight of the community.

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DECLARATION OF CONFLICTING INTEREST

We strictly certify that there is no conflict of interest between the authors of this article.

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AUTHOR CONTRIBUTION

Armawati Abidin: Conduct initial problem analysis, collect primary data, and analyze primary data, examine and agree on the contents of the article.

Anas Budi: Collecting secondary data, analyzing secondary data, and examining and agreeing on the content of the article.

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