Journal of Health and Nutrition Research
Published by
Media Publikasi Cendekia Indonesia
https://www.journalmpci.com/index.php/jhnr/index
ISSN : 2829-9760 (Online - Elektronik)
ISSN 2829-9760

**Original Research**
Journal of Health and Nutrition Research, Vol. 1 No. 2 (2022): 76-81

# Management Behavior of Rabies-Transmitting Animal (RTA) Bites in The Work Area of Kawua Health Centre, Poso Regency

Firmansyah*[1], Rahma[1], Rasyika Nurul Fadjriah*[1], Lusia Salmawati[2]
[1] Department of Health Promotion, Tadulako University, Palu, Indonesia
[2] Department of Occupational Safety and Health, Tadulako University, Palu, Indonesia
*Corresponding author, contact: Firmansyahwantah15@gmail.com

**Abstract**

The Kawua Health Center is one of the health centers in Poso Regency with the highest rabies-transmitting animal (RTA) bite cases in 2019 and is very disturbing to the community. Bites of Rabies Transmitting Animals (RTA) are risky for transmitting the rabies virus to humans, so an effective and efficient response is needed. The purpose of the study was to obtain information on the behavior of handling Rabies Transmitting Animal Bites in the working area of the Kawua Health Center, Poso Regency. Data collection was done by in-depth interviews involving 15 research informants determined by the purposive sampling technique. The results showed that the informants' knowledge was still not good regarding rabies, both in terms of prevention and control of RTA bites. The attitude of the informant was not good in carrying out first aid measures and prevention efforts before RTA bites occurred. Also, the role of health workers was not good in preventing and controlling rabies cases in the working area of the Kawua Health Center. Families play an important role in controlling rabies by providing informational, emotional, and instrumental support. It is recommended for the Kawua Health Center staff to improve the prevention and control of RTA bites cases further.

**Keywords:** Rabies-transmitting animal, Knowledge, Attitude, Role of Health Care Workers, Family Support

**Key Messages:**

- The informants' knowledge of rabies and prevention is quite good but still lacking in preventing ATR bites.
- The attitude of the informant is still not good in carrying out first aid measures, and prevention efforts before ATR bites occur

Access this article online

Quick Response Code

DOI: https://doi.org/10.56303/jhnresearch.v1i2.32



Received: 18 Juli2022
Accepted: 30 August 2022



## 1. Introduction

Rabies is an infectious disease that is zoonotic and challenging to eradicate, in animals and humans, resulting in death. Rabies disease, often known as mad dog disease, is caused by the rabies virus that attacks the central nervous system (1). The virus can be transmitted through RTA (Rabies-Transmitting Animals) bites, such as dogs, bats, and cats. Dogs are the biggest carriers of rabies (2). Based on WHO data that about 55,000 people

per year die due to rabies, and around 95% comes from Asia - Africa. Rabies accounts for about 45% of human deaths worldwide. Countries in Asia that have the highest rabies cases are Bangladesh, dogs bite around 300,000 people, and 2,000-2,500 people die from rabies; in India, every year, 20,000 people die from dog bites infected with rabies; in Nepal, 200 people die every year from rabies; in Thailand, about 400,000 cases of dog bites per year. Every year, 21,000–24,000 people die in Southeast Asia due to rabies. Of the 19 million humans bitten by dogs, at least 4 million died from rabies (3).

Based on data from the Ministry of Health of the Republic of Indonesia in 2018, in Indonesia, there were 6 provinces with high cases of rabies transmitting animal (RTA) bites, including Bali (26,130 cases), East Nusa Tenggara (12,530 cases), South Sulawesi (6,125 cases), North Sumatra (5,423 cases), North Sulawesi (5,423 cases) and Central Sulawesi (2,758 cases). The highest number of deaths from rabies occurred in West Kalimantan with 25 cases, followed by North Sulawesi (16 cases), South Sulawesi (15 cases), East Nusa Tenggara (12 cases), and Central Sulawesi (5 cases) (4).

Central Sulawesi Province hit a significant increase in RTA bites cases, namely 2,537 cases in 2017, increasing to 2,759 in 2018. Data shows that the 5 highest RTA bites cases are Poso Regency (590 cases), Palu City (476 cases), North Morowali Regency (410 cases), Parigi Moutong Regency (343 cases), and Sigi Regency (284 cases), this is due to better reporting conducted. In 2018, RTA bites cases in this province were 2,759 more in men, precisely 1,482 cases (53.72%), while women were 1,277 cases (46.28%) (5). Poso Regency is an endemic area for rabies, with 593 cases of RTA bites to October 2019 and 2 cases of Lyssaviruses. Poso district has 24 health centers, and 3 health centers have the highest RTA bites cases from 2015 to 2019, including Tentena Health Center, Kawua Health Center, and Tagolu Health Center (6). At the Tentena Health Center, the RTA bites cases in 2015 were 112; in 2016 were 32 cases; in 2017 were 92 cases; in 2018 were 71 cases; in 2019 were 124 cases. The RTA bites cases At Kawua Health Center in 2015 were 41 cases; in 2016 were 66 cases; in 2017 were 45 cases; in 2018 were 50 cases; in 2019 increased by 85 cases. Meanwhile, the cases in Tagolu Health Center in 2015 were 87 cases; in 2016 were 61 cases; in 2017 were 91 cases; in 2018 were 107 cases; in 2019 were decreased by 58 cases. The bite comes from a dog bite source (6).

Rabies control in humans is aimed at reducing rabies cases to a minimum by carrying out various efforts to find and treat RTA bites cases early, carry out wound care using running water and soap, and administer VAR or a combination of VAR and anti-rabies serum (SAR) according to indications and procedures management and treatment of rabies cases. The high cases of rabies in North Sumatra from 2007-2017 occurred due to low public awareness to immediately report bite cases to health care facilities and the lack of availability of VAR (7).

RTA (Rabies-Transmitting Animals) bite is immensely risky for transmitting rabies to humans. Currently, rabies is a health problem in Poso district, Central Sulawesi, due to an extraordinary event in the area. This condition is undoubtedly very worrying and already disturbing the community. Therefore, an efficient and effective response is needed to prevent and eradicate rabies.

## 2. Methods

This type of research was qualitative research with a case study approach, which investigated the behavioral background of individuals, groups, institutions, or communities intensively, carried out from August 2020 to November 2020, located in the working area of the Kawua Health Center. The informants of this study were divided into 3 types; the first informant was the holder of the rabies prevention program as key informants; 7 people who had experienced rabies bites as regular informants; and 7 family members as additional informants in the working area of the Kawua Health Center. The technique used in determining the informants was purposive sampling. Data validation was carried out to maintain the data obtained during this research. The source triangulation was carried out to maintain the validity of the data.

## 3. Results

### Community Knowledge in RTA Bites Management

Based on interviews, researchers determined the extent of the informant's knowledge related to rabies. The informant stated that rabies could cause death if a VAR injection is not given and that rabies can be transmitted from dogs, cats, and monkeys who are positive for rabies. The laboratory results said that the brain sample is positive for rabies. Meanwhile, it is related to how rabies is transmitted to humans. Informants provided

information that rabies can be transmitted from saliva, bites of rabid animals, and clients who are declared positive for rabies to other people whom clients bite, but there are still clients who say that rabies can be transmitted by touch. The key informant's statement reinforced that one of the factors causing RTA bites cases is because they come into contact with HPR so that the animal responds by biting and scratching the client. Next was related rabies prevention. The informant provided information that the client carried out the prevention by not maintaining, avoiding direct contact with rabies-transmitting animals and in chains, and trapping rabies-transmitting animals. However, there were still clients who did prevention by doing first aid by washing the wounds bitten by RTA and using a traditional method that the client gets the information from the parents with *Suanggi,* a local orange (burning the *Suanggi* local orange is then applied to the wound that has been bitten).

**Community Attitude in RTA bites Management**

Our interviews to determine the attitude of the informants regarding how to prevent from being bitten by RTA found the informant provided information that the prevention method was by avoiding direct contact with animals that transmit rabies as well as chaining and holding pets. However, some clients said that prevention was by doing first aid by washing wounds with soap and taking them to health services to get treatment related to maintaining or caring for RTA. Informants provided information on how to maintain or care for their pets by giving the anti-rabies vaccine to pets every six months and once every three months, and the client said that in the area where they live, most of the animals that transmit rabies are allowed to roam free. The observations were reinforced by researchers who found that rabies-transmitting animals such as dogs still roam freely on the streets, and not all dog and cat owners cage and tie their pets; most dog owners let their pets roam freely. Furthermore, related to first aid when bitten by a rabid animal. The informant stated doing first aid by cleaning the wound with soap and going to health services such as a hospital to get treatment and VAR injections. However, there were still clients who did first aid with burnt *Suanggi* (a local orange) and then applied to the wound bitten by a rabid animal. The key informant's statement reinforced that the client provided direction when a bite occurred, performed first aid by washing the wound with soap, and did not put oranges on the wound bitten by ATR. Also, based on the results of observations made by researchers, it was found that at the research site in find that when a rabid animal is bitten, the client who is bitten immediately performs first aid by washing the wound with soap.

**Family Support in Overcoming ATR Bites**

Based on interviews conducted by researchers, additional informants were asked to find out what information the client gave to the family regarding preventing cases of ATR bites. It was found that additional informants provided information on rabies prevention to families by avoiding direct contact, not maintaining and taking good care of ATR, and providing information on signs of animals affected by rabies ATR bite. Nevertheless, for prevention when experiencing ATR bites, go to health service to get a VAR injection.

**Role of Health Officers in ATR Bites Prevention**

Based on interviews conducted by researchers to find out what rabies prevention programs are at the Kawua Health Center. The informant stated that the prevention program was by tracking rabies cases, going directly to the field when there was an ATR bite case, cutting the dog's head, and giving VAR injections to clients who had been bitten. The public health does not have VAR available, but VAR is available at the Poso District Health Office to obtain VAR by carrying out the VAR collection procedure. It was reinforced by the statements of ordinary informants and additional informants that, to get VAR, one must carry out the procedures set for taking VAR by going to the health center to get a certificate. It was done by bringing the sample of the head of the animal that bit the client to the Animal Husbandry Service. According to the animal husbandry laboratory results, it was given to the Poso District Health Office, VAR was given, the VAR was taken to the health center, and then injected into the client who was bitten. Furthermore, it was related to the role of the Kawua Health Center in preventing and controlling rabies. The informant stated that the client cooperated with surveillance when carrying out a rabies program by going directly to the community and conducting rabies education. It was contrary to the results of observations made by researchers at the research location, and it was found that key informants, when there was a case of a rabies-transmitting animal bite, did not go directly to the field because the client whom a rabies-transmitting animal bit went directly to the public health to get treatment. The key informants have two

responsibilities at the Kawua Health Center, namely the holder of the rabies program and the ER nurse at the Kawua Health Center, so the rabies program has not been running well.

## 4. Discussion

### Community Knowledge in ATR Bites Management

Knowledge is one of the factors that facilitate behavior change. The knowledge possessed is important in shaping one's actions. Knowledge can be said to be a factor that facilitates changes in behavior or taking action. A person's actions against health problems, in this case, the prevention and control of rabies (8). Public knowledge regarding rabies and how to prevent it is very good, as can be seen from the answers of the informants who said that rabies could be transmitted from dogs, cats, and monkeys that were positive for rabies. In addition, the community believes that rabies can cause death if it is not treated immediately. It is just that in terms of first aid for someone who has been bitten, public knowledge is still lacking. This can be seen from the answers of several informants who chose to pour water on the bite scar or treat it with Suanggi local orange leaves.

### Community Attitude in ATR Bites Management

One of the attitudes in preventing rabies is the attitude toward good dog care (9). Some important things that must be considered in maintaining a good dog include giving dog food 2-4 times a day, bathing the dog more than once a week, and trimming the dog's nails regularly since nails can become a breeding ground for rabies virus, not cutting dogs for food, dogs kept indoors or in fenced yards, regularly vaccinated dogs for rabies, prevented dogs from fighting with other animals, and used a leash when walking the dog. If the community has a good attitude towards how dogs are kept, this is very helpful in preventing the occurrence of rabies. However, in reality, many people still do not take care of their pets properly. This can be seen from the research results that most pets are not tied up and caged. They are coupled with the attitude of the community, who prefer to wash animal bite wounds with lime leaves instead of going to public health. Prevention of rabies when ATR bites occur in humans is to wash the wound as soon as possible with soap under running water for 15 minutes; ATR bites sufferers are then given antiseptic, which can be given including povidone-iodine, alcohol, and immediately taken to the public health, hospital and Rabies Center for getting a VAR injection (10).

### Family Support in Overcoming ATR Bites

Family support in efforts to prevent rabies can be done through the provision of information, communication, and support for prevention, so that family members have the responsibility to do so. The forms of family support given to family members are information support from the family functioning as a collector and disseminator of information about various issues, assessment support (the family as respectful guidance), being a model and handling problem solving, instrumental support (the family is a source of support, practical and concrete help), the encouragement of feeling (the family becomes a place of fun). Every family can carry out rabies prevention activities if all family members provide support to carry out these activities through family support (11). In this study, all forms of support have been given to family members who experience ATR bites. The information often conveyed is related to prevention, how to treat, and administering VAR injections as a treatment effort. The information support, in this case, the family acts as a collector and disseminator of information. Explain about giving advice, suggestions, and information that can be used to reveal a problem. The benefit of this support is that it can suppress the emergence of a stressor because the information provided can contribute to specific suggestions for individuals. This support includes advice, suggestions, instructions, and providing information.

### Role of Health Officers in ATR Bites Prevention

Prevention of rabies transmission to humans is by administering an anti-rabies vaccine. The benefits of the rabies vaccine are to awaken the immune system in the body against the rabies virus, and it is hoped that the antibodies formed will neutralize the rabies virus (10). This study found that the administration of vaccines was not a program carried out by public health. Because the vaccine is only specifically for people who experience ATR bites due to limited availability, it is in line with research conducted by Ryantini KTD (2020) (12), which explains that the availability of VAR in several districts in Bali, especially in Tabanan, also affects the broader spread of this virus. The lack of coordination between the District Health Office and the rabies post (Regional Public Hospital and Community Health Centre) also affected the handling of this case. The lack of funds for handling this case also

affects the handling of rabies cases in Bali. In the discourse, it is stated that Health Office still owes VAR to Sanglah Hospital in the amount of Rp. 6.7 billion. In this case, the Poso District Health Office must always control the handling of pet bite cases in Poso by checking rabies posts regarding VAR stock, vaccinating, and providing sufficient funds for handling this case. A weak control will prevent some residents whose dogs bite from receiving VAR.

Comprehensive health care is a part of the health care system, which has its primary purpose, namely as a system that provides early prevention and as a system that provides health promotion to change the health status of the community. Health services provided by health centers are more dominant in services in the form of treatment and healing (13). The counseling activities carried out are expected to increase public knowledge about rabies, awareness to seek medical treatment, and provide reports after being a victim of animal bites may contribute to the reduction of human deaths and risk due to the case of a rabid dog bite(14–16).

## 5. Conclusion

This study concludes that the informants' knowledge of rabies and prevention is quite good but still lacking in preventing ATR bites. The attitude of the informant is still not good in carrying out first aid measures, and prevention efforts before ATR bites occur. The role of health workers is still not good in preventing and controlling rabies cases in the working area of the Kawua Health Center. Families play an important role in controlling rabies by providing informational, emotional, and instrumental support. It is recommended for the Kawua Health Center staff to improve the prevention and control of ATR bites cases further.

**Funding:** None

**Conflicts of Interest**: The authors declare no conflict of interest.

## References

1. Yousaf MZ, Qasim M, Zia S, Khan M ur R, Ashfaq UA, Khan S. Rabies molecular virology, diagnosis, prevention and treatment. Virol J. 2012 Feb 21;9:50.
2. Wicaksono A, Ilyas AZ, Sudarnika E, Lukman DW, Ridwan Y. Pengetahuan, Sikap, dan Praktik Pemilik Anjing Terkait Rabies di Kabupaten Sukabumi, Jawa Barat. Jurnal Veteriner. 2018 Sep 7;19(2):230–41.
3. WHO. Rabies [Internet]. World Health Organization. 2018 [cited 2022 Aug 11]. Available from: https://www.who.int/news-room/fact-sheets/detail/rabies
4. Kemenkes RI. Kementrian Kesehatan Republik Indonesia. Jakarta: Kementrian Kesehatan Republik Indonesia; 2018.
5. Dinkes Sulteng. Profil Kesehatan Provinsi Sulawesi Tengah Tahun 2018. Palu: Dinas Kesehatan Provinsi Sulawesi tengah; 2018.
6. Dinkes Poso. Profil Kesehatan Kabupaten Poso 2019. Poso: Dinas Kesehatan Kabupaten Poso; 2019.
7. Sitepu FY, Depari E, Afriani A, Sianturi C. Evaluasi program pencegahan dan pengendalian Rabies dalam rangka menuju Sumatera Utara Bebas Rabies 2020. JHECDs: Journal of Health Epidemiology and Communicable Diseases. 2018;4(2):42–8.
8. Parlin W. Factors Affecting The Incidence Of Rabies Disease In Puskesmas Rejosari Pekanbaru City. Jurnal Ipteks Terapan. 2019 May 15;13(1):12–9.
9. Abidin A, Budi A. Hubungan Antara Pengetahuan Dan Sikap Terhadap Upaya Pencegahan Penyakit Rabies Pada Masyarakat Di Wilayah Kerja Puskesmas Tomoni Timur Tahun 2020. In Yogyakarta: Universitas Islam Indonesia; 2020 [cited 2022 Aug 11]. p. 32–42. Available from: https://dspace.uii.ac.id/handle/123456789/25874
10. Kemenkes RI. Buku Saku Petunjuk Teknis Penatalaksanaan Kasus Gigitan Hewan Penular Rabies Di Indonesia. Jakarta: Kementerian Kesehatan RI; 2016.
11. Jamari EJ, Nurdin F. Faktor Pelayanan Kesehatan, Dukungan Keluarga dan Masyarakat Dengan Upaya Pencegahan Kejadian Rabies di Wilayah Kerja Puskesmas Pandan Kecamatan Sungai Tebelian Kabupaten Sintang. VISIKES: Jurnal Kesehatan Masyarakat [Internet]. 2019 Sep 19 [cited 2022 Aug 11];18(2). Available from: http://publikasi.dinus.ac.id/index.php/visikes/article/view/2300

12. Ryantini KTD. Analisis Berita Tentang Kejadian Tergigit Anjing Di Bali Dalam Harian Bali Post Berdasarkan Paradigma Formal Dan Fungsional. Stilistika : Jurnal Pendidikan Bahasa dan Seni. 2020;8(2):284–304.
13. Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2010.
14. Dilago Z. Penyuluhan dan Pelaksanaan Vaksinasi Rabies di Desa Tagalaya Kecamatan Tobelo. Jurnal Pengabdian Masyarakat: Darma Bakti Teuku Umar. 2019 Dec 31;1(1):93–100.
15. Hasanov E, Zeynalova S, Geleishvili M, Maes E, Tongren E, Marshall E, et al. Assessing the impact of public education on a preventable zoonotic disease: rabies. Epidemiol Infect. 2018 Jan;146(2):227–35.
16. Matibag GC, Kamigaki T, Kumarasiri PVR, Wijewardana TG, Kalupahana AW, Dissanayake DRA, et al. Knowledge, attitudes, and practices survey of rabies in a community in Sri Lanka. Environ Health Prev Med. 2007 Mar;12(2):84–9.