Tropical Veterinarian

International Journal Devoted to All Aspect of Health and Disease of Animals in the Tropics

Published by the Faculty of Veterinary Medicine, University, Ibadan (Nigeria)

Publication Data:
Subscription Rates:
Personal Subscription:

Institutional Subscription:
Airmail Postage:
Single Issues and Back volumes:

Subscription Orders:

Tropical Veterinarian is published four times annually. Subscriptions run for a full calendar year. Prices are given per volume, along with postage rate. N1,000.00, US$80.00 (must be in the name of, billed to, and paid by an individual. Order must be marked personal subscription).
N3,500.00, US$120.00 (Regular rate).
N650.00; US$60.00 (Extra per Volume).
Information on availability and prices can be obtained through the Business Manager.
Orders should be placed with the:
Business Manager,
Tropical Veterinarian,
Faculty of Veterinary Medicine,
University of Ibadan, Ibadan, Nigeria.
FAX: 02-8103043
E-mail: **tropivet@gmail.com**
tropivet@ui.edu.ng
WEBSITE: *www.tropivet.com*
ISSN 0794-4845

Trop Vet. 40: (I & II) 42-52 (2022)

IMPROVING AWARENESS AND PREVENTIVE ACTIVITIES ABOUT RABIES IN IFELODUN LOCAL GOVERNMENT AREA, KWARA STATE AND ABA SOUTH LOCAL GOVERNMENT AREA, ABIA STATE, NIGERIA

*Aiyedun J.O.[1], Nwoha R. I. O.[2], Oludairo O. O.[1], Daodu O. B.[3] and Akanbi, O. B.[4]

[1]Department of Veterinary Public Health and Preventive Medicine, University of Ilorin, [2]Department of Veterinary Medicine, Micheal Okpara University of Agriculture, Umudike, [3]Department of Veterinary Microbiology, University of Ilorin, [4]Department of Veterinary Pathology, University of Ilorin

*Corresponding author; olaaiyedun@yahoo.com

Key Words: Rabies, Awareness, Preventive activities

Abstract

Rabies is an ancient disease of poor and vulnerable communities and is responsible for many human deaths in Africa and Asia. The rate at which cases of rabies are reported in the media, veterinary clinics and human hospitals is increasingly high. Although rabies is highly feared, yet public awareness and knowledge of its risk factors are still very poor in Nigeria. The low level of the knowledge of the disease has negatively affected the elimination of rabies in the country. The aim of this study was to impact members of the selected communities with knowledge about rabies. Rabies awareness campaign was carried out in Ifelodun Local Government Area of Kwara State and Aba South Local Government Area of Abia State, Nigeria from July to September 2019 using public address system to communicate, inform and educate youths and adults in schools, churches, mosques, markets, town halls and community centers in the study areas. Questionnaire was thereafter administered to collect data on rabies awareness and anti-rabies vaccination for dogs. The study revealed general acceptance of members of the communities to the educational awareness campaigns carried out in the study areas. This was also reflected in the respondents' knowledge that rabies is a deadly disease (69%) transmitted majorly by dogs (73%) and predominantly through bite (86.6%). The government at all levels should sponsor and incorporate rabies education into free

mass dog vaccination programs. We recommend that government should support regular rabies campaign in addition to mass dog vaccination programs and consider subsidy on anti-rabies vaccine for the successful elimination of rabies in Nigeria.

Introduction

Rabies is recognized as a zoonosis that is most amenable to control because effective tools exist for the prevention of dog-mediated human rabies. However, the wide biodiversity, host range, illiteracy and poor sanitary measures in many developing countries complicates rabies control (Oludairo *et al.*, 2016). Rabies remains one of the most dreadful and important threats to public health (Aiyedun and Olugasa, 2012). The disease presents as a progressive encephalomyelitis**,** which is invariably fatal, and is caused by neurotropic virus of the genus *Lyssavirus* of the family *Rhadoviridae*. Rabies is regarded under-reported in many regions, due partly to a lack of surveillance and laboratory infrastructure, compounded by religious, cultural and social taboos. Nigeria has prioritized rabies as the leading zoonotic disease of public health importance (Ihekweazu *et al*., 2021).

Prevention of rabies in humans can be achieved by preventing rabies in dogs and other reservoirs. Rabies in dogs can be prevented through sustained education campaign, mass vaccination programs, dog population control and responsible dog ownership. To prevent human rabies, rapid intervention following a dog bite incident is essential including washing of bite site with water and soap, infiltration with Human Rabies Immunoglobulin (HRIG) if available, appropriate bite wound management and administration of post exposure rabies vaccination (as prophylaxis measure). Also critical is an efficient and effective surveillance system that detects cases in humans and animals promptly (Cleaveland *et al.*, 2003; Nel and Rupprecht, 2007, Aiyedun *et al*., 2017b, CDC, 2019, Mbilo, *et al*., 2020). While several studies have focused on domesticated dogs, the roles and control of rabies virus among wild life especially the carnivores, the felines and bats, are important for human prevention.

The lack of effective health education programmes focused on rabies results in a low level of awareness of the disease burden and the methods necessary to prevent and control the disease. Low awareness also causes poor community participation in local rabies control programmes (Aiyedun *et al*., 2021). Therefore, effective public education programmes must consider cultural, religious, and political factors.

One of the most important factors in rabies health education is the level of awareness of both the medical professional and the general public. As rabies awareness is important for all, the World Rabies Day was first designated as September 8 in 2007 and this is now being marked on 28th September annually. The day is coordinated by the Global Alliance for Rabies Control (GARC) and endorsed by the World Health Organization (WHO), the Pan American Health Organization (PAHO) and the Center for Disease Control (CDC).

The day was notably matched with the anniversary of the death of the first efficacious rabies vaccine developer, Louis Pasteur (WHO, 2016). This was done with the intention to raise awareness about rabies as well as promoting preventive activities in communities at risk by providing relevant information and advice on how to prevent the disease. Generally, it was estimated that 400,000 people in 74 countries were educated about rabies in the first year and by 2016, about 180 million people in 220 countries have been educated on rabies (WHO, 2016, Wright *et al*., 2021). This initiative has mobilized government and non-governmental agencies in support of rabies health education and subsequent control (WHO, 2016).

Public awareness is a viable, relatively inexpensive and highly effective tool for rabies prevention. The essence of the education is to avoid dog bite, apply appropriate first aid, seek medical attention in cases of exposures and how to handle dog bite wounds (WHO, 2012).

This study utilized education/awareness campaign to improve the knowledge of members of the selected communities about rabies and its preventive activities in Ifelodun Local Government Area of Kwara State and Aba South, Local Government Area of Abia State, Nigeria.

Materials and Methods

Volunteer veterinarians, animal health officers and veterinary students carried out rabies education awareness campaigns in the first and second week of September, 2019. This was designed using multiple means and tools such as visual arts, flyers and mass media including church clergies, imams in mosques and town criers who were briefly trained prior to the campaign were also involved in the awareness program. Banners were produced and placed at strategic locations in Ifelodun LGA of Kwara State and Aba South LGA of Abia State, Nigeria. A public lecture on rabies was presented and an educative play performed on the importance of avoiding dog bite and

steps to take towards rabies prevention in case of an exposure. Also, a campaign (tagged "Rabies walk") to the Local Government secretariat at Share, Kwara State and Aba, Abia State, Nigeria were organized to sensitize the public about rabies. Lectures on rabies were delivered in local languages in churches, mosques, markets and town halls with the aid of clergies, imams and town criers.

Using systematic random sampling, a total of 300 standard structured closed ended questionnaire was administered to the volunteers in the study areas using face to face/interviewer method in the third week of September, 2019. Additionally, interviews were conducted when clarification were needed on the data received from some volunteers. The questionnaire/checklist gathered information about the level of awareness on rabies, animals transmitting the disease, mode of transmission and first aid practices following bite of suspected rabid animal and control measures

Statistical Analyses

Data were entered into Statistical Package for Social Sciences version 15. Descriptive analyses were carried out and presented in a table.

Results

Two hundred and eighty five (285) people volunteered to participate in the study out of 300 people approached (Table1).

Table 1: Level of awareness on rabies among the study population in Ifelodun LGA, Kwara State and Aba South LGA, Abia State, Nigeria

S/N	Questions	Frequency (n= 285)	Percentage (%)
1.	**Have you heard about rabies?**		
	Yes	211	74
	No	74	26
2.	**Is rabies a deadly disease?**		
	Yes	197	69
	No	88	31
3.	**Which Animal transmit rabies?**		
	Dog	208	73

	Cat	57	20
	Bat	20	7
4.	**What are the Modes of transmission of Rabies?**		
	Bites	247	86.6
	Scratches	27	9.4
	Licking of wounds by animals	11	4.0
	Aerosol/inhalation	0	0.0
5.	**First aid after been bitten by suspected rabid animal**		
	Wash wound with water and soap	75	26.3
	Apply iodine only	122	42.8
	I do not know	91	32
6.	**Is there a vaccine against rabies in dogs?**		
	Yes	125	43.8
	No	109	38.2
	I do not know	51	17.8
7.	**Is rabies vaccination in dog required?**		
	Yes	139	48.7
	No	146	51.2
8.	**Who will you consult for treatment if bitten by suspected rabid animal?**		
	Human doctor	84	29.5
	Vet. Doctor	201	70.5
9.	**Are you aware of human rabies vaccine?**		
	Yes	119	41.7
	No	166	58.1
10.	**Can human rabies vaccine be administered before exposure?**		

Yes	117	41
No	168	59

Only 74% (211/285) of the respondents had heard about rabies while 31% (88/285) of them did not believe that rabies is deadly. Based on the knowledge of the animal that could transmit rabies, dog (73%; 208/285) was opined to be the most common animal transmitting rabies while the least was bat (7%; 20/285).

Most respondents believed that rabies can be transmitted to them through bite of a rabid dog (86.6%; 247/285) but few believed in rabies transmission through licking of human body by rabid dog (4%; 11/285). While many (42.8%; 122/285) claimed they would apply only iodine to wound after being bitten by a suspected rabid dog, 32% (91/285) do not know what to do post-bite. Although many respondents believed that canine anti-rabies vaccine that can be used to prevent rabies in dogs exist (43.8%; 125/285), an appreciable number (17.8%; 51/285) of respondents did not know of its existence, while 51.2%; 146/285 of the respondents thought that vaccination of dogs against rabies was not necessary. Additionally, 70.5% (201/285) of our respondents believed that after a dog bite, veterinarians were to be consulted rather than medical doctors. More than half (58.1%; 166/285) of the respondents did not know about the existence of human anti-rabies vaccine and of its pre exposure administration (59%; 168/285) (Table 1).

Discussion

Despite the sensitization on rabies for members of the communities in the study areas, people that still had not heard about rabies were probably those that were not available during the street, one-on-one and group sensitization about rabies or those that did not pay rapt attention to the rabies education awareness campaigns. Some members of the community in the study areas that affirmed that rabies is not deadly may still be holding on to traditional belief on the cure for rabies.

Since most people in the study area stated that dogs are the major sources of rabies virus, there could however, be cross-infection from wildlife to dogs as a result of hunting for wildlife by dogs in these communities. Hunting by dogs leads to close and frequent wildlife-dog interaction which increases the probability of rabies infection in these communities.

Due to the fact that some respondents did not accept that rabies transmission can occur through licking of wounds on human bodies by rabid dogs, several people could be exposed to rabid dogs unknowingly.

The ignorance displayed by some volunteers in the study areas regarding appropriate steps to take after been bitten by suspected rabid dogs and the prophylactic vaccination in animals and humans implies more aggressive rabies education awareness campaign may be needed for members of the communities in the study areas. Other stringent measures that would engage 95% of target community for rabies educational awareness campaign could be adopted. Accordingly, public awareness, health education, dog population control and responsible pet ownership are important in rabies prevention and control (Lembo *et al*, 2010; WHO, 2012; Taylor, 2013).

Education is key to rabies prevention at all levels of the society and it has been reported that by simply increasing educational awareness on local, national and international levels, most rabies death could be prevented (Aiyedun *et al*, 2017a). Public and professional education as well as community participation is valuable tools in rabies control (Dedmon, 2008; Rühli *et al.,* 2013).

Collaboration is vital in the local, national and global fight against rabies (Schwabe, 1994; Fletcher *et al.,* 2009; Kahn, 2011). To address the threats of rabies, concerted efforts towards rabies education as well as inter-sectorial collaborations in community-based rabies campaign programs are critical (Rabozzi *et al.,* 2012; Daodu and Oluwayelu, 2016). These would contribute immensely to rabies prevention and elimination by 2030 (Daodu *et al.,* 2017). Rabies prevention and control is not a matter of "to whom it may concern" it requires all hands to be on deck. It should be approached from the offensive not the defensive perspectives (Daodu *et al.,* 2017). Therefore, rabies elimination should never be approached as a war to be won by anyone but by everyone (Gibbs, 2014).

In conclusion the level of awareness on rabies among volunteers in the study population was low. Community involvement and teamwork are valuable tools in rabies education and preventive activities. The level of adoption and adherence to prophylactic vaccination in animals and humans were low among the volunteers in the study population.

It is recommended that**,** Communities should be empowered to educate their own people in their local languages. All

communication networks and strategies should be deployed to educate people on rabies preventive measures. World Rabies Day programmes should be given priority and adequately funded. Long term benefits of this educational campaign should be evaluated and improved upon.

References

Aiyedun, J. O. (2011). Epidemiology of canine rabies in Ilorin, Nigeria. A PhD Thesis in the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Nigeria.

Aiyedun, J. O. and Olugasa, B. O. (2012). Identification and Analysis of Dog use, Management Practices and Implications for Rabies control in Ilorin, Nigeria. *Sokoto Journal of Veterinary Sciences*, 10 (2), 1-6.

Aiyedun, J. O., Oludairo, O. O. and Olorunshola, I. D. (2017a). Indigenous Knowledge and Practices in the Control of Rabies in North Central, Nigeria. *Assiut Veterinary Medical Journal* 63; (153) 79-83.

Aiyedun, J. O., Oludairo, O. O. and Olorunshola, I. D. (2017b). Roles of wildlife in epidemiology of Rabies: A review *Journal of Advanced Veterinary and Animal Research* 4; (2) 117-124.

Aiyedun, J. O., Oludairo, O. O., Jegede, H. O., Daodu, O. B. and Akanbi, O. B. (2021). Knowledge and attitude towards zoonoses among workers in selected Zoological Gardens in Nigeria. *Journal of Research in Forestry, Wildlife & Environment* Vol. 13 (3), 37-41.

Centers for Disease Control and Prevention (CDC), (2019). Rabies Postexposure Prophylaxis (PEP). Available at: https://www.cdc.gov/rabies/medical_care/index.html. Accessed 4th March, 2022

Cleaveland, S., Kaare, M., Tiringa, P., Mlengeya, T. and Barrat, J. (2003). – A dog rabies vaccination campaign in rural Africa: impact on the incidence of dog rabies and human dog-bite injuries. *Vaccine*, **21** (17–18), 1965–1973.

Daodu, O. B. and Oluwayelu, D. O. (2016). Rabies knowledge and pre-exposure vaccination status of clinical veterinary medicine students in Nigeria. *Vom*

Journal of Veterinary Science, 11: 117 – 125.

Daodu, O. B., Daodu, O. C. and Olorunshola, I. D (2017). Rabies Vaccination Status among Occupationally Exposed Humans in Nigeria. *Nigerian Veterinary Journal*, 38 (3): 272 – 279.

Dedmon, R. E (2008). World rabies day (September 28, 2008). The second official global initiative to increase awareness, improve preventive efforts and reduce mortality from this uniformly fatal disease. *Asian Biomedicine,* 2; 4,1-3.

Fletcher, J., Franz, D., LeClerc, J. E. (2009). Healthy plants: necessary for a balanced 'One Health' concept. *Veterinaria Italiana*; 45: 79–95.

Gibbs, E. P. J. (2014). The evolution of One Health: a decade of progress and challenges for the future. *Veteterinary Record,* 174: 85–91.

Ihekweazu, C., Michael, C. A., Nguku, P. M., Waziri, N. E., Habib, A. G., Muturi Mathew, Olufemi Abayomi, Dzikwi-Emennaa, A. A., Balogun, M. S., Visa, T. I., Dalhat, M. M., Atama, N. C., Umeokonkwo, C. D., Mshelbwala, G. M., Vakuru, C. T., Kabir Junaidu, Okolocha, E. C., Umoh, J. U., Olugasa, B. O., Babalobi O. O., Lombin Lami and Cadmus Simeon (2021). Prioritization of zoonotic diseases of public health significance in Nigeria using the one-health approach. *One Health* 13 (2021) 100257 https://doi.org/10.1016/j.onehlt.2021.100257

Kaare, M., Lembo, T., Hampson, K., Ernest, E., Estes, E., Mentzel, C. and Cleaveland, S. (2009). Rabies control in rural Africa: evaluating strategies for effective domestic dog vaccination. *Vaccine*, **27** (1), 152–160.

Kahn, L. H. (2011). The need for one health degree programs. *Infectious Diseases Ecology and Epidemiology*: http://dx.doi.org/10.3402/iee.v1i0.7919

Knobel, D. L., Cleaveland, S., Coleman, P. G., Fèvre, E. M., Meltzer, M. I., Miranda, M. E., Shaw, A., Zinsstag, J. and Meslin, F. X. (2005). Re-evaluating the burden of rabies in Africa and Asia. *Bull. WHO*, **83** (5), 360–368.

Lembo, T., Hampson, K., Kaare, M. T., Ernest, E., Knobel, D., Kazwala, R. R., Haydon, D. T. and Cleaveland, S. (2010). –

The feasibility of canine rabies elimination in Africa: dispelling Discrepancies in data reporting for rabies, Africa. *Emerging infectious Disease*, **19** (4), 529–533.

Mbilo, C., Coetzer, A., Bonfoh, B., Angot, A., Bebay, C., Cassamá, B., De Benedictis, P., Ebou, M. H., Gnanvi, C., Kallo, V., Lokossou, R. H., Manjuba, C., Mokondjimobe, E., Mouillé, B., Mounkaila, M., Ndour, A. P. N., Nel, L., Olugasa, B. O., Pato, P., Pyana, P. P., Rerambyath, G. A., Roamba, R. C., Sadeuh-Mba, S. A., Suluku, R., Suu-Ire, R. D., Tejiokem, M. C., Tetchi, M., Tiembre, I., Traoré, A., Voupawoe, G., Zinsstag J. (2021). Dog rabies control in West and Central Africa: A review. *Acta Tropica*., 224:105459. DOI: 10.1016/j.actatropica.2020.105459. PMID: 32404295

Nel, L. H. and Rupprecht, C. E. (2007). The emergence of lyssaviruses in the old world: the case of Africa. *Current Topical Microbiology and Immunology*, 315, 161–193.

Oludairo, O.O., Aiyedun J.O., Olorunshola I., Dibal M. A., Gungubias A. A., Ayeni A. M. J and Adeyi A. J. (2016). Transboundary diseases and Wildlife Management: An overview. *Bangladesh Journal of Veterinary Medicine*, 14: 119-126

Rabozzi, G., Bonizzi, L, Crespi, E, Somaruga, C., Sokooti, M., Tabibi, R, Vellere, F., Brambilla, G., Colosio, C. (2012). Emerging Zoonoses: the "One Health Approach". Safe Health Work, 3 (1): 77-83.

Rühli, F. J. and Henneberg, M. (2013). New perspectives on evolutionary medicine: the relevance of microevolution for human health and disease. *BMC Med*; 11: 115.

Schwabe, C. W. (1994). Veterinary Medicine and Human Health. 3rd edition William and Wilkins Baltimore 680 pp. South-East Asia, New Delhi.

Taylor, L. (2013). Eliminating canine rabies: the role of public–private partnerships. *Antiviral Res*., 98 (2), 314–318. doi:10.1016/j.antiviral.2013.03.002.

World Health Organization (WHO), (2012). Strategic framework for elimination of human rabies transmitted by dogs in the South-East Asia region. Available at: https://apps.who.int/iris/handle/

10665/205920. Accessed on 7th March 2022.

World Health Organization (WHO), (2016). WHO Expert Consultation on Rabies. WHO Technical Report series, 931. Available at: www.allianceforrabiescontrol.org.

Wright, N., Subedi, D., Pantha, S., Acharya, K. P. and Nel, L. H. (2021). The Role of Waste Management in Control of Rabies: A Neglected Issue. Viruses, 13(2), 225. https://doi.org/10.3390/v13020225.