



Assessment of Dog Owners' Knowledge, Attitude and Practice Towards Rabies in Sabon Gari Local Government Area, Kaduna State, Nigeria

Nuraddeen Bello Ibrahim^{1*}, Grace Sabo Nok Kia², Jibril Adamu³, J.K.P Kwaga², Philoma Mde Ikye-Tor⁴, Mohammed Babashani⁵, Abubakar Usman¹, Aliyu Abubakar Yahaya⁶, Ibrahim Ishaq⁷, Bala Ningi Umar³.

¹National Agricultural Extension and Research Liaison Services, Ahmadu Bello University (NAERLS/ABU) Zaria, Nigeria., ²Department of Veterinary Public and Preventive Medicine, Faculty of Veterinary Medicine, Ahmadu Bello University Zaria, Nigeria, ³Department of Veterinary Microbiology, Ahmadu Bello University Zaria, Nigeria, ⁴Department of Veterinary Public and Preventive Medicine, Joseph Sarwuan Tarka University, Makurdi, Nigeria, ⁵Veterinary Teaching Hospital, Ahmadu Bello University Zaria, Nigeria, ⁶National Animal Production Research Institute, Ahmadu Bello University Zaria, Nigeria, ⁷Sabon Gari Veterinary Clinic, Local Government Service Board, Kaduna state, Nigeria. *Corresponding author: Email: nuraddeenbello1078@gmail.com; Tel No: +2348134018572

ABSTRACT

Rabies is a fatal viral zoonosis of serious public health concern worldwide that occurs in over 150 countries. In Nigeria, the disease is endemic and remains neglected, misdiagnosed and under-reported. The level of public awareness perceptions and attitudes towards the disease are important factors in planning for effective control strategies. The aim of the study is to assess dog owners' Knowledge, Attitudes and Practices (KAP) towards rabies in Sabon Gari Local Government Area (LGA), Kaduna state. Structured questionnaire was prepared and administered between December 2022 and March 2023 to 400 dog owners to assess their KAP towards rabies. The survey gathered data on demographic characteristics of the dog owners and KAP of dog owners towards rabies. Associations between demographic variables and the scores related to KAP were analyzed using Chi square (χ^2). Majority (94.6%) of the dog owners have heard about rabies; however, 54% were ignorant of the fact that rabies spread through the saliva of a rabid dog. Only 47.8% knew that rabies has no cure. Most respondents (67.8%) did not know that at 3 months of age all dogs should receive their first dose of anti-rabies vaccination. There was a statistically significant association ($P= 0.00$) between educational level and occupation of respondents with the categorized knowledge score. Dog owners had acceptable knowledge of rabies (68.9%) and a positive attitude (77.5%). They, however, lack comprehensive understanding of the disease. Unsatisfactory practices from the dog owners (51.2%) were also identified. Dog owners should be given more enlightenment on the importance of rabies vaccination for dogs and the potential risks associated with rabies transmission.

Key words: Rabies; Vaccination; Knowledge; Attitude; Practices; Dog owners.

INTRODUCTION

Background of the Study

Rabies is a fatal zoonotic disease that affects the central nervous system of warm-blooded animals including humans. It is caused by the genus *Lyssavirus* belonging to the family *Rhabdoviridae* and associated with bite from an infected animal. Once clinical signs manifest, the disease is invariably fatal (Rupprecht *et al.*, 2002). The disease is estimated to cause about 60,000 deaths globally, mainly in Asia and Africa (WHO, 2018). In Nigeria, about 10,000 dog-bite incidents are reported annually which are far less than the actual situation since this represents mainly urban high-income communities that sought medical attention (NCDC, 2018). Forty percent (40%) of people who are bitten by suspected rabid animals are children under 15 years of age and dogs are the source of 99% of human rabies deaths (WHO, 2018; Akingbade *et al.*, 2020). The global economic cost of rabies transmitted by dogs is approximately \$8.6 billion per year, apart from the psychological distress experienced by individuals and communities (WOAH, 2023).

Rabies is found worldwide except in islands and distributed in all continents excluding Australia and Antarctica. The disease is endemic in Africa including Nigeria and is grossly neglected, under-diagnosed and under-reported making it difficult to control (Singh *et al.*, 2017; Kia *et al.*, 2018; Al-Mustapha *et al.*, 2021).

Many dogs are left unvaccinated against the rabies virus in Nigeria, due possibly to increased dog population, poor ownership practices and shortage of vaccines (Ahmed *et al.*, 2000; Adaba *et al.*, 2004; Okeme *et al.*, 2020). Research reports have emphasized that in order to attain herd immunity in a community, up to 70% of dog population must be immunized against rabies (WHO, 2018;

Knobel *et al.*, 2007). Vaccination is regarded as an effective tool for the control of rabies in both humans and animals (Brown *et al.*, 2016; Wallace *et al.*, 2020). Vaccination of companion animals is a cost-effective option for herd immunity in dogs, since post exposure treatment in human subjects is very costly, especially in developing countries (WHO, 2023; Ikye-Tor *et al.*, 2020; Al-Mustapha *et al.*, 2021) like Nigeria. In Nigeria, it has not been possible to successfully control rabies, instead evidences show that the disease is on the increase (Garba *et al.*, 2017) because accurate data are non-existent making it difficult for local and national policies on rabies control to be instituted. The level of public awareness about rabies and public perceptions and attitudes towards rabies are important factors in planning for effective control strategies (Wasay *et al.*, 2012; Al-Mustapha *et al.*, 2020). To lower the occurrence of dog bites and prevent dog-transmitted human rabies, knowledge gaps and practices in a society need to be assessed and known in order to adequately plan successful prevention and control measures (Al-Mustapha *et al.*, 2020). The aim of the study was to assess the dog owners Knowledge, Attitudes and Practices (KAP) towards rabies in Sabon Gari LGA, Kaduna state, Nigeria.

MATERIALS AND METHODS

Study Area and Population

The study was conducted in Sabon-Gari Local Government Area, Kaduna State. The Local Government is located at latitude 11⁰N and longitude 7.7⁰E with a tropical climate. The area experiences two seasons; dry season usually from November to March and the wet season from April through October (Lawan *et al.*, 2015). Sabon-Gari L.G.A has a population of 286,871 people (2006 census) with a land area of

approximately 600 square kilometres. The population is made of 20% of each major tribe such as Hausas, Igbos, Yorubas etc and with a dog-to-human ration of 1:7.6 in the urban areas and 1:219 in the rural areas (Luga *et al.*, 2008). The people are mostly farmers, traders and civil servants with the farming and livestock rearing as the major occupation. Sabon Gari LGA has eleven political wards which includes Chikaji, Bomo, Basawa, Anguwan Gabas, Dogarawa, Hanwa, Jamaa, Jushi, Muchia, Zabi and Samaru.

Ethical Approval

Ethical clearance was obtained from Ahmadu Bello University Ethical Committee on Animal Use and Care (ABUCAUC) with approval number: ABUCAUC/2023/028. Furthermore, verbal consent was obtained from the dog owners and only those who agreed to participate were included in the study.

Questionnaire Sample size estimation

The sample size formula [$n = Z_{1-\alpha/2}^2 p(1-p)/d^2$] by Charan and Biswan, (2013) was used in determining sample size of the respondents. Where:

n = Minimum sample size

Z = 1.96 standard normal deviate for desired confidence interval (95%)

P = estimated proportion of population having knowledge about rabies (54%) as reported by Odeh *et al.* (2013).

$Q = 1 - P$

d = Desired Absolute Precision (5 %)

$n = 1.96^2 \times 0.54(1-0.54) / (0.05^2) = 381.70$

Therefore, $n = 382$

Study Design for Knowledge, Attitude and Practice (KAP)

The cross-sectional study for the KAP was conducted on dog owners aged 18 years and above from December 2022 to February 2023 at households within the wards of Sabon Gari LGA Kaduna state. In an attempt to gain a representative sample, respondents residing in low, medium and high-density areas were included in the investigation. Snowball sampling methods was used to recruit the respondents. This method involved using existing contacts and social networks of known dog owners who provided information about the next available household in the area or community until the targeted number of respondents was achieved. As a result of this method, a total of 400 participants were interviewed for the study. Responders with analysable data were 373 and the response rate for the 382 sample size was 98% (Fig. 1).

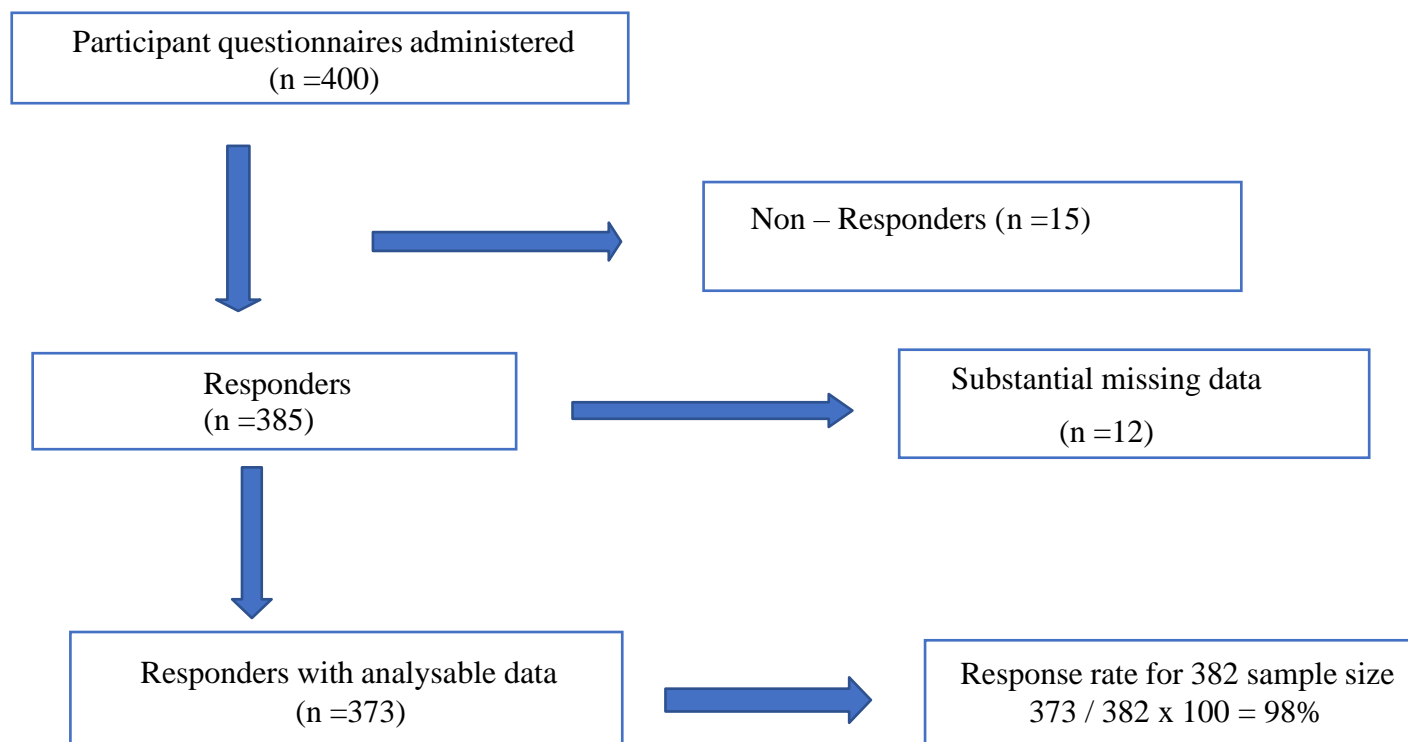


Figure 1: Flow diagram of participants’ recruitment

QUESTIONNAIRE DESIGN AND ADMINISTRATION

A semi-structured questionnaire adopted from a previous study (Konzing et al., 2021) was used to collect KAP data from dog owners. Open data kit (ODK) management tool was used in data collection to ease data collection and management. Basic data relating to demography such as age, gender, educational level, and occupation were captured. Furthermore, the knowledge, attitude, and practice of the study participants as it pertained to rabies were also contained in the questionnaire. These include questions on the mode of transmission, clinical symptoms, and preventive measures. There were 4 key sections (Sections A, B, C and D) to the questionnaire.

The first section consisted of 9 questions that were about the social demography of the respondents. The second section consisting of 13 questions was about respondent knowledge about rabies. The third and fourth sections with 10 and 6 questions respectively, were about attitude and practices. A marking scheme containing correct answers was prepared and used to mark the responses and scores were allocated. The choice type answers were “Yes”, “No”, “I don’t know”, and the responses were marked and scores allocated. Each correct answer was allocated one point and an incorrect answer was allocated zero point. The questionnaire was administered either Hausa or English languages to dog owners who consented to the study. All information obtained from the questionnaire was treated as private and confidential.

Data Analyses

Data collected were exported to excel spread sheet, filtered and checked for completeness. Data were later transferred into Statistical Package for Social Sciences (SPSS) version 20 (standard version SPSS Inc., Chicago, USA) and the results were presented in tables.

The mean knowledge, attitude and practice scores were calculated. Respondents with knowledge, attitude and practice scores equal or greater than the mean scores were considered to have good knowledge, attitude and practice while those who had scores below the mean were categorized as having poor knowledge, attitude and practice. Associations between demographic variables and the categorized scores were assessed using chi-square (χ^2) test of association and odds ratio; confidence intervals (95%) were analyzed for odds ratios. Values of $p < 0.05$ were considered significant in the χ^2 analysis.

RESULTS

Knowledge, Attitude and Practice of Dog Owners in Sabon Gari LGA, Kaduna State Socio-Demographic Variables of Dog Owners

The socio-demographic information of the 373 respondents included in the KAP study are summarized in Table I. Majority of the respondents (75.9%) who participated in the study were males and 24.1% were females with age range of between 40 and 49 years (28.7%). Educationally, only 13.4% had no formal education, 30% had secondary education with the majority (44.8%) having tertiary education. Most (24.1%) of the respondents were Farmers, 22.5% were businessmen and women, 21.4% were civil servants, 18.8% were students and 12.9% were

unemployed as at the time of the survey. One hundred and forty-one (37.8%) dog owners have been keeping dogs for more 11 years and most (53.9%) of them kept the dogs majorly for security purpose.

Overall Scores for Knowledge, Attitude and Practices of the Dog Owners Toward Rabies in Sabon LGA, Kaduna State

Of the 373 respondents, 257 (68.9%) had good knowledge about rabies, Positive attitudes were found in 289 (77.5%), whereas 182 (51.2%) of the dog owners showed poor practices towards rabies (Table II).

Knowledge of the Dog Owners Toward Rabies in Sabon LGA, Kaduna State

Majority (94.6%) of the respondents have heard of rabies, 317 (84.2%) affirmed that humans and animals can be infected with the rabies virus, 176 (47.2%) know that rabies can spread through the saliva of a rabid dog but the remaining 197 (52.8%) respondents weren't aware of this fact. Likewise, only 178 (47.7%) out of the 373 respondents knew that rabies has no cure once clinical signs manifest, while the remaining 195 (53.3%) were ignorant of this knowledge. Most (81.0%) respondents knew that the main reservoir of rabies in Nigeria is dogs. 239 (64.1%) correctly identified children below the age 15 years as the group of individuals more prone to dog bite and 263 (70.5%) affirmed that a friendly dog that suddenly turns aggressive may have rabies (Table IIIa.)

Three hundred and thirty (84.5%) respondents correctly identified profuse foamy salivation and aggressive biting of objects and people as the signs observed in a rabid dog, most respondents 253 (67.8%) did not know that all dogs should receive their first dose of anti-rabies vaccination

at 3 months of age. Most (65.1%) of the respondents affirmed that it is compulsory to vaccinate dogs that are totally confined and 206 (55.2%) respondents correctly answered that vaccination of dogs should be repeated annually. Majority (63.0%) of the respondents affirmed that regular vaccination is the most effective way of controlling rabies and 204 (54.7%) confirmed that dog registration and licensing help in control of rabies (Table IIIb).

Association Between Demographic Variables and Categorized Knowledge Score of the Dog Owners

There was a statistically significant association ($P= 0.00$) between educational level of respondents and categorized knowledge score. A significant statistical association was also noticed between the occupation of respondents and the categorized knowledge score (Table VI)

Attitude of the Dog Owners Toward Rabies in Sabon LGA, Kaduna State

Of all the respondents, 345 (92.5%) considered Rabies a serious public health issue, while 298 (79.9%) affirmed that they would be very concerned about their dogs contracting rabies. Most (71.9%) of the respondents positively stated that they would go to the hospital when bitten by a dog and 230 (61.7%) affirmed that keeping dogs that aren't vaccinated is dangerous. Majority (91.5%) of the respondents said children should not be allowed to play with an unknown dog (Table V).

Association Between Demographic Variables and Categorized Attitude Score of the Dog Owners

Statistical analysis revealed a significant association ($P= 0.00$) between educational level of respondents and categorized attitude score. A

significant statistical ($P= 0.00$) association was also noticed between the occupation of respondents and the categorized attitude score. Statistical analysis also revealed a significant ($P= 0.02$) association between Period of dog keeping and the categorized attitude score (Table VI)

Practice of the Dog Owners Toward Rabies in Sabon LGA, Kaduna State

Two hundred and thirty-seven (63.5%) respondents stated that washing dog bite wounds with soap and water before going to the hospital was necessary, while 185 (49.6%) respondents said they do not allow their dogs to roam and mix with other dogs in the community. Most (56.7%) of the respondents said they don't take their dogs to the Veterinary clinic for regular clinical examination. Majority (76.1%) of the respondents affirmed that they cannot house a stray dog (Table VII).

Association Between Demographic Variables and Categorized Practice Score of the Dog Owners

Statistical analysis revealed a significant association ($P= 0.003$) between the gender of respondents and categorized practice score. A significant statistical ($P= 0.00$) association was also noticed between the occupation of respondents and the categorized practice score and also between the educational level of the respondents ($P=0.00$) and the categorized practice score. Statistical analysis also revealed a significant ($P= 0.00$) association between Period of dog keeping and the categorized practice score (Table VIII).

TABLE I: Demographic variables of dog owners in Sabon Gari LGA Kaduna State Nigeria

Characteristic	Frequency (373)	Percentage
Gender		
Female	90	24.1
Male	283	75.9
Age (years)		
18 – 29	84	22.5
30 – 39	125	33.5
40 – 49	107	28.7
50 – 59	44	11.8
60 and above	13	3.5
Occupation		
Unemployed	48	12.9
Student	70	18.8
Civil servant	80	21.4
Businessman/woman	84	22.5
Farmer	91	24.4
Educational Level		
No formal education	50	13.4
Primary	44	11.8
Secondary	112	30.0
Tertiary	167	44.8
Period of dog keeping (years)		
< 5 years	101	27.1
6-10 years	131	35.1
Above 11 years	141	37.8
Major reason keeping dogs		
Security	201	53.9
Pet	81	21.7
Herding	8	2.1
Hunting	67	18.0
Breeding/business	16	4.3

TABLE II: Overall Scores for Knowledge, Attitude and Practice Toward Rabies Amongst Dog Owners in Sabon Gari LGA, Kaduna State

Scores	Knowledge	Attitudes	Practices
Good (50-100)	257 (68.9%)	289 (77.5%)	191 (51.2%)
Poor (0-49)	116 (31.1%)	84 (22.5%)	182 (48.8%)
Total	373 (100%)	373 (100%)	373 (100%)

TABLE IIIa: Knowledge of dog owners towards Rabies in Sabon Gari LGA, Kaduna state.

Questions	Frequency (n=373)	Percentage (%)
Have you heard of rabies?		
No	20	5.4
Yes	353	94.6
Can humans and animals be infected with the rabies virus?		
Yes		
No	317	85.0
I don't know	8	2.1
	48	12.8
How is Rabies transmitted?		
Bite from a rabid dog	314	84.2
consuming contaminated food or water	18	4.8
Witchcraft/supernatural	9	2.4
I don't know	32	8.6
Rabies can be spread through the saliva of a rabid dog?		
Yes	176	47.2
No	70	18.8
I don't know	127	34.0
Does Rabies has cure once signs manifest?		
Yes	88	23.6
No	178	47.7
I don't know	107	28.7

The main reservoir of rabies in Nigeria is?		
Cats	3	0.8
Cattle	1	0.3
Dogs	302	81.0
I don't know	67	18.0
What groups of people are most prone to dog bites?		
Youth	88	23.6
children below 15 years	239	64.1
Old people	8	2.1
I don't know	38	10.2
If a dog bites you without provocation, it is likely to be a rabid dog		
I don't know		
Yes	238	63.8
No	83	22.3
I don't know	52	13.9
A friendly dog that suddenly turns aggressive may have rabies?		
Yes	263	70.5
No	69	18.5
I don't know	41	11.0

TABLE IIIb: Knowledge of dog owners towards Rabies in Sabon Gari LGA, Kaduna state

Questions	Frequency (n=373)	Percentage (%)
What signs do you observe in a rabid dog?		
Aggressive biting of objects and people	270	72.4
Profuse foamy salivation	60	16.1
Sleeping	3	0.8
I don't know	40	10.7
At what age should dogs receive the first dose of rabies vaccination		
at any age	87	23.3
3 months	120	32.2
6 months	36	9.7
1 year	42	11.3
I don't know	88	23.6
How often is vaccination of dogs against rabies done?		
Monthly	22	5.9
Quarterly	52	13.9
Annually	206	55.2
I don't know	93	29.9
Is it compulsory to vaccinate a dog that is totally confined?		
Yes	243	65.1
No	130	34.9

Do you know that the head of a suspected pet should be submitted to the veterinarian?			
Yes	113	30.3	
No	118	31.6	
I don't know	142	38.1	
What is the most effective method for rabies control in dogs?			
Killing stray dogs	40	10.7	
Restriction of dog movements	52	13.9	
Castration	22	5.9	
Regular vaccination	235	63.0	
I don't know	24	6.4	
Dog registration and licensing help in control of rabies?			
Yes	209	56.0	
No	30	8.0	
I don't know	134	35.9	

TABLE IV: Association Between Demographic Variables and Categorized Knowledge Score of Dog Owners in Sabon Gari LGA, Kaduna State, Nigeria (n = 373)

Variables	Good (%)	Poor (%)	Total	χ^2	Df	P-value
Gender						
Male	195(68.9)	88(31.1)	283	0.000	1	0.548
Female	62(68.9)	28(31.1)	90			
Educational Qualification						
No formal education	18(36.0)	32(64.0)	50	25.671	4	0.00
Primary	27(61.4)	17(38.6)	44			
Secondary	70(62.5)	42(37.5)	112			
Tertiary	142(85.0)	25(15.0)	167			
Occupation						
Civil servant	69(86.3)	11(13.8)	80	39.916	4	0.00
Businessman/woman	54(64.3)	30(35.7)	84			
Unemployed	30(62.7)	18(37.5)	48			
Student	55(78.6)	15(21.4)	70			
Farmer	49(53.8)	42(46.2)	91			
Age						
18-29 years	62(73.8)	22(26.2)	84	5.994	4	0.20
30-39 years	89(71.2)	36(28.8)	125			
40-49 years	66(61.7)	41(38.3)	107			
50-59 years	33(75.0)	11(25.0)	44			
Above 60 years	7(53.8)	6(46.2)	13			

Period of dog keeping						
1-5	96(73.3)	35(26.7)	131	2.958	2	0.23
6-10	90(63.8)	51(36.2)	141			
>11	71(70.3)	30(29.7)	101			

TABLE V: Attitude of Dog Owners Towards Rabies in Sabon Gari LGA, Kaduna State

Questions	Frequency (n=373)	Percentage (%)
Do you consider rabies a serious public health issue?		
Yes		
NO	345	92.5
	28	7.5
How concerned are you about your dog contracting rabies?		
Very concerned	298	79.9
Somewhat concerned	65	17.4
Not concerned	10	2.7
If bitten by a dog, would you go to the hospital?		
Yes	266	71.9
No	69	18.5
Not sure	38	10.2
Is keeping dogs that are not vaccinated against rabies dangerous?		
Yes	230	61.7
No	108	29.0
No idea	35	9.4
Should children be allowed to play with an unknown dog?		
Yes	26	7.0
No	341	91.5
No idea	6	1.6

TABLE VI: Association Between Demographic Variables and Categorised Attitude Score of Dog Owners in Sabon Gari LGA, Kaduna State, Nigeria (n = 373)

Variables	Positive (%)	Negative (%)	Total	χ^2	Df	P-value
Gender						
Male	215(76.0)	68(24.0)	283	1.529	1	0.548
Female	74(82.2)	16(17.8)	90			
Qualification						
No formal education	25(50.0)	25(50.0)	50	44.655	3	0.000
Primary	30(68.2)	14(31.8)	44			
Secondary	81(72.3)	31(27.7)	112			
Tertiary	153(91.6)	14(8.4)	167			
Occupation						
Civil servant	74(92.5)	6(7.5)	80	39.916	4	0.00
Businessman/woman	59(70.2)	25(29.8)	84			
Unemployed	35(72.9)	13(27.1)	48			
Student	66(94.3)	4(5.7)	70			
Farmer	55(60.4)	36(39.6)	91			
Age						
18-29 years	71(84.5)	13(15.5)	84	3.958	4	0.384
30-39 years	94(75.2)	31(24.8)	125			
40-49 years	79(73.8)	28(26.2)	107			
50-59 years	34(77.3)	10(22.7)	44			
Above 60 years	11(84.6)	2(15.4)	13			
Period of dog keeping						
1-5	109(83.2)	22(16.8)	131	7.157	2	0.028
6-10	99(70.2)	42(29.8)	141			
>11	81(80.2)	20(19.8)	101			

TABLE VII: Practice of Dog Owners Towards Rabies in Sabon Gari LGA, Kaduna State

Questions	Frequency (n=373)	Percentage (%)
Washing dog bite wounds with soap and running water before going to the hospital is necessary		
Yes	237	63.5
No	20	5.3
No idea	116	31.1

Do you allow your dog to roam and mix with other dogs in the community?		
Yes	182	48.8
No	185	49.6
No idea	6	1.6
Do you take your dog to the Veterinary Clinic for regular clinical examination?		
Yes	144	38.6
No	213	56.7
No idea	16	4.3
Do you know who to contact in case of a suspected rabid animal in your community?		
Yes	177	47.6
No	196	52.5
Can you house a stray dog?		
Yes	89	23.9
No	284	76.1

Table VIII: Association Between Demographic Variables and Categorised Practice Score of Dog Owners In Sabon Gari LGA, Kaduna State, Nigeria (n = 373)

Variables	Good (%)	Poor (%)	Total	χ^2	Df	P-value
Gender						
Male	133(47.0)	150(53.0)	283	8.320	1	0.003
Female	58(64.4)	32(35.6)	90			
Qualification						
No formal education	2(4.0)	48(96.0)	50	118.382	3	0.000
Primary	12(27.3)	32(72.3)	44			
Secondary	43(38.4)	69(61.6)	112			
Tertiary	134(80.2)	33(19.8)	167			
Occupation						
Civil servant	74(92.5)	6(7.5)	80	98.283	4	0.000
Businessman/woman	59(70.2)	25(29.8)	84			
Unemployed	35(72.9)	13(27.1)	48			
Student	66(94.3)	4(5.7)	70			
Farmer	55(60.4)	36(39.6)	91			

Age						
18-29 years	51(60.7)	33(39.3)	84	8.558	4	0.073
30-39 years	63(50.4)	62(49.6)	125			
40-49 years	44(41.1)	63(58.9)	107			
50-59 years	26(59.1)	18(40.9)	44			
Above 60 years	7(53.8)	6(46.2)	13			
Period of dog keeping						
1-5	88(67.2)	43(32.8)	131	21.703	2	0.000
6-10	56(39.7)	85(60.3)	141			
>11	47(46.5)	54(53.5)	101			

DISCUSSION

Findings in this study showed that the respondents had a good level of knowledge (68.9%) and attitude (77.5%) towards rabies, although they lacked comprehensive understanding of the disease. For instance, respondents had poor knowledge when the dog should receive its first vaccination, that rabies is transmitted through the saliva of a rabid dog and that the disease doesn't have cure once signs manifest. This showed that there is still need for increased education and awareness efforts targeting dog owners and the general public regarding the risks associated with rabies (Kolawole *et al.*, 2018). The good level of knowledge exhibited by the respondents may have resulted from rabies being endemic and from incidences of the disease in the study area thereby increasing awareness in the communities. Statistical analysis revealed a significant association between respondents' educational level and occupation and their knowledge score. Civil servants and students, and those who had tertiary and secondary education exhibited higher knowledge score.

This observation could be attributed to the fact that civil servants and students possessed a higher level of educational attainment and were likely to have more access to information from the internet, friends, social media or workshop training and from Veterinarians during mass dog vaccinations campaigns or regular visit to the clinics. This finding is similar to a study conducted by Ameh *et al.*, (2014) in Wukari, Taraba state.

The attitude of respondents, such as considering rabies as a serious public health issue, showing concern about their dogs contracting rabies, seeking medical care in the hospital if bitten by a dog, affirming that keeping unvaccinated dogs is dangerous and discouraging children from playing with unknown dogs signified their active involvement in rabies control efforts. A statistically significant association existed between the occupation, educational level and the attitude score of the respondents as seen in the knowledge score. This could also be attributed to the respondents' educational background and exposure as most them with good attitudes were students and civil servants. This finding is similar

to the work of (Konzing *et al.*, 2021). It was also observed in this study that female dog owners had better positive attitude than male dog owners. This observation could be due to the fact that women stay more at home and are more caring to their pets.

Although the responders had a good level of knowledge and attitudes towards rabies, they however, exhibited poor practices such as; allowing their dogs to roam freely and mix with other dogs in the community and not taking their dogs to the Veterinary clinics for regular clinical examination. Allowing dogs to roam freely in the community is a public health risk as the dogs could be exposed to potential source of rabies virus or come in contact with infected animal. These negative practices could be attributed to poverty, traditional beliefs, inadequate understanding of the dangers of rabies and poor dog ownership practice. This highlights the need for more awareness campaign and enlightenment towards good practices towards rabies. This agrees to findings of a study conducted in Kahama town council, Shinyangan region of Tanzania. (Zan Bar *et al.*, 2008; Yaniz *et al.*, 2010)

CONCLUSION

Findings in this study revealed that dog owners in Sabon Gari LGA had good knowledge about rabies and a positive attitude toward the the disease prevention. However, they lacked comprehensive understanding of the disease. Dog owners should be given more enlightenment on the importance of rabies vaccination for dogs and the potential risks associated with rabies transmission to improve their knowledge gaps about the disease.

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