Study on Knowledge, Attitude and Practice and Related Factors about Rabies Among the Community of Assosa Town.

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Abstract: This study was conducted in Assosa town of the Benishangul Gumuz Regional state Western Ethiopia from November 2014 to April 2015 to assess the knowledge, attitudes and practices on rabies and related factors among the community of the town by using Community based cross-sectional quantitative study design. All kebeles of the town were selected purposively for this study since the kebeles were few in number and can be assessed. Individual household was selected using a systematic random sampling technique. From the selected household, individual respondent was selected using simple random sampling technique and interviewed. During the interview respondents aged greater than eighteen years and households who live at least for one year in the town was considered. The data were collected from 360 households through face to face interview using pre-tested and structured questionnaires. Of the 360 respondents interviewed, 168(46.7%) and 192 (53.3%) were males females respectively. Almost all of the respondents indicated that they had previously heard about rabies and 254 (70.6%) had good level of knowledge, attitudes and practices about rabies. There was strong association between knowledge, attitudes and practices scores of rabies and sex ($\chi 2$=5.885, p=0.020); educational level ($\chi 2$=1.022, p=0.000); occupation ($\chi 2$=72.024, P=0.000) and household size ($\chi 2$=11.136, p=0.004). Generally these findings indicated that the Assosa town community has good knowledge about rabies. Therefore, information source like radio, television programmes and news papers should play significance role to raise knowledge of the community about the deadly nature of rabies, on mode of transmission, symptoms and the availability of appropriate preventive measure like vaccines for dogs.

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1. Introduction

Rabies is a viral disease of all warm blooded animals, which causes acute fatal encephalitis, with almost 100% case fatality rate. It is an acute encephalitis illness caused by rabies virus. Rabies virus is the prototype species of the genus Lyssa virus in the family of Rhabdoviridae (Jackson *et al.,* 2007). Rabies virus infection occurs most commonly when a rabid animal bites an animal or a person. Saliva from rabid animals can contaminate an open wound, and mucous membrane (Rupprecht *et al*., 2006) when it comes in direct contact to them.

In domestic animals, the incubation period is generally from 3-12 weeks but can range from several days to months, rarely exceeding 6 months (Alan, 2005; Cleaveland *et al., 2002*). Clinical signs of the disease appear following migration of the virus from the site of bite to the central nervous system, the duration of which is highly variable depending on several factors including the distance of the bite from the brain (Parry *et al*., 2004). The virus affects virtually all mammals and infected species invariably die from the disease once clinical signs are manifested (Jackson *et al*., 2007).

This disease occurs in more than 150 countries and territories and about 55, 000 people die of rabies every year, mostly in Africa, Asia, and South America even though it is a vaccine preventable disease (WHO, 2006). Forty percent 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. Every year, more than 15 million people worldwide receive a post-exposure preventive regimen to avert the disease; this is estimated to prevent 327, 000 deaths from rabies annually (WHO, 2010).

Rabies is endemic in developing countries like Africa and Asia, and most human deaths from the disease occur in these endemic countries and is often misdiagnosed, under-diagnosed and under-reported (Ehizibolo *et al.,* 2011). Human mortality from endemic canine rabies was estimated to be 55, 000 deaths per year and was responsible for 1.74 million

disability adjusted life years (DALYs) losses each year. The annual cost of rabies in Africa and Asia was estimated at US$ 583.5 million, most of which is due to cost of post-exposure prophylaxis (PEP) (Knobel *et al.*, 2005).

Ethiopia being one of the developing countries is highly endemic for rabies. Approximately 10, 000 people were estimated to die of rabies annually in Ethiopia which makes it to be one of the worst affected countries in the world (Fekadu, 1997). Dogs are the principal source of infection for humans and livestock (Deressa *et al*., 2010). Although rabies is primarily a disease of dogs in Ethiopia, it is also a common problem among human population because of high rate of man to dog contact (Eshetu *et al.,* 2002). There is however, lack of information to determine the magnitude of rabies in man and other domestic animals in the country (Hatfield, 2004).

In Ethiopia, individuals who are exposed to rabies virus often see traditional healers for the diagnosis and treatment of the disease. These widespread traditional practices of handling rabies cases are believed to interfere with timely seeking of post-exposure prophylaxis. Rabies victims especially from rural areas seek post-exposure prophylaxis treatment after exhausting the traditional medicinal intervention and usually after a loss of life from family members. Nationwide data on rabies are not available to reveal the actual magnitude of the problem. However, the distribution of vaccine to the various regions and the fragmented reports on human and animal rabies cases are strong indicators of the wide spread nature of the disease in the country (Deressa *et al*., 2010).

Poor public awareness towards rabies is considered as one of the bottle necks for the prevention and control of the disease in Ethiopia especially in canine rabies endemic cities. Understanding communities' perceptions of the cause, mode of transmission, symptoms, treatment and possible intervention measures of rabies is an important step towards developing strategies aimed at controlling the disease and determining the level of implementation of planned activities in the future. But, there is lack of accurate quantitative information on rabies both in humans and animals and little is known about the awareness of the people about the disease to apply effective control measures in Ethiopia. Similarly there is no any kind of research conducted in Assosa town that can provide accurate quantitative information about knowledge, attitude and practice of rabies among the community. Therefore, the present study was designed to assess knowledge, attitude and practices about rabies and related factors among the community of Assosa town.

2. Materials And Methods

2.1. Description of the Study Area

The study was conducted from November 2014 to April 2015 among the Community of Assosa town living in the entire kebeles of the town. Assosa town is the capital city of the Benishangul Gumuz regional state, found at a distance of about 678 km west of Addis Ababa, located between 8°30"and 40°27" N and 34°21" and 39°1" E. The altitude of the area ranges from 1500-2300m above sea level. According to National Meteorological Service agency, (2007), the average annual rainfall is 1316 mm with uni-modal type of rainfall that occurs from April up to October. Its mean annual temperature ranges from 16.75°C to 27.9°C. The total population size of Assosa town was estimated to be 20,226 of which 10,929 are males and 9,297 are females. The six largest ethnic groups reported in this town were the Amhara 54%, Oromo 22.12%, Tigray 2%, Berta 17%, and all other ethnic groups made up of 3.42% of the population. Amharic was spoken as first language by 55.02%, Afan Oromiffa by 22.5%, Berta by 15.9%, Tigrinya by 4.45%, and the remaining 3.64% spoken all other primary language reported. The majority of the inhabitants professed Ethiopia Orthodox Christianity 54.92%; Muslim 29.75%; Protestant 14.89% (CSA, 2005).

2.2. Study Design

Community based cross-sectional quantitative study design was used to assess the knowledge, attitudes and practices (KAP) on rabies and related factors among the community of Assosa town.

2.3. Study Population and Sample Size Determination

The Community of Assosa town that live in all the kebeles and above 18 years of age were included in the study. Accordingly a total of 360 respondents were taken for the study purpose.

The required sample size for this study was estimated by considering 64.1% of population knowing about rabies based on the awareness done in Bahir Dar town by (Tadesse *et al*., 2014). Thus, the sample size was calculated according to Thursfield (2005) using 95% confidence interval and 0.05 absolute precision. This is calculated by using the following formula:

$n = 1.96^2 \times p_{ex}p\ (1-p_{ex})/d^2$

Where

N = required sample size.

$P_{ex}p$ = expected proportion of population knowing about rabies are 64.1%

d^2 = desired absolute precision (0.05)

As a result 354 respondents were selected but in this study 360 participants were interviewed.

2.4. Sampling Method, Data Collection tool and Procedures

All kebeles of Assosa town were purposively selected for the study since the kebeles were few in number and can be assessed. From all the kebeles of the town, individual household was selected using a systematic random sampling technique. The number of households included in each kebele was determined by proportional allocation based on the total number of households estimated in each kebele and from the selected household individual respondents were selected using simple random sampling technique and interviewed. During the interview, respondents above 18 years of age and households who live for at least one year were considered. The age of respondents were grouped as young (18-30), adult (31-46) and old (>46). Structured questionnaire consisting of closed ended questions were used for this study. The data were collected via interview. The questionnaire was first developed in English and then translated in to Amharic language (native language) for appropriateness and easiness in approaching the study participants.

2.5. Data Management and Analysis

After collecting, the data were cleaned and checked for its completeness. Those incomplete and inconsistent data were corrected when possible and removed otherwise. After complete check up, the data were coded and entered in to Microsoft Excel and transported to SPSS version 16.0 statistical packages for windows and analysis made. The frequency distribution of both dependent and independent variables were worked out by using descriptive statistics techniques (Frequencies, mean, SD and percentage). Association between independent variables and KAP scores on rabies was calculated using Pearson's Chi square. The result was considered significant when the calculated p-value was less than 0.05 at 95% confidence interval (Thrusfield, 2007).

3. Results

3.1. Socio-Demographic Characteristics of the Respondents

A total of 360 respondents were interviewed to the questionnaire and the majority of respondents 192(53.3%) were female and 168(46.7%), male. Regarding age groups, 219 (60.8%) of the study participants were between 18-30 years old. The majority of the respondents 182(50.6%) were Orthodox followed by Muslim 120 (33.3%) and protestant 53(14.7%). Concerning educational status, 118 (32.8%) of the participants were at college level and 87(24.2%) were first degree and above. From the total respondents about 143 (39.7%) were government employees. Regarding family size, 200 (55.6%) participants had family size of four to six persons (Table 1).

Table 1: Socio-demographic information of the study participants in Assosa town

Socio-demographic characteristics	Frequency/ number	Percent (%)
Gender		
Male	168	46.7
Female	192	53.3
Age		
18-30	219	60.8
31-46	123	34.2
>46	18	5
Religion		
Orthodox	182	50.6
Muslim	120	33.3
Protestant	53	14.7
Catholic	5	1.4
Educational status		
Illiterate	41	11.4
Primary school (1-8)	56	15.6
Secondary and preparatory school (9-12)	58	16.1
College	118	32.8
First degree and above	87	24.2
Household size		
1-3	137	38.1
4-6	200	55.6
>6	23	6.4
Occupation		
Government employee	143	39.7
Private employee	7	1.9
Merchant	68	18.9
Unemployed	59	16.4
Student	83	23.1

3.2. Community KAP about Rabies in Assosa town

From the total twenty eight questions sixty selected questions were asked for each respondent regarding cause, sources and mode of transmissions, clinical signs and prevention practices and treatment measures of rabies. Which was resulted in a response of either, choose the correct answer (had got one mark) or wrong answer (had got zero mark) for each question. The number of questions for which the respondent gave correct responses was counted and scored. The score was then pooled together and the mean score was computed to determine the overall KAP of respondents. Respondents who scored greater than or equal to the mean value (Mean=12.36, SD=2.407) were grouped to be good at KAP while the ones who scored less than the mean value were grouped as Poor at KAP on rabies. The data show

that about 254 (70.6%) of the study participants were found to have good KAP about rabies and 106 (29.4%) were found to have poor KAP level.

3.3. Knowledge of participants regarding to cause, mode of transmissions, clinical sign, fatal nature and host range of rabies

As the data indicates that almost all respondents were familiar to the disease. Among the participant, 225 (62.5%) were aware that the virus is the cause of rabies and 265(73.6%) were knew that bite, scratch and licking of open wound or mucous membrane are mode of transmission from animal to human or other animals; 284(78.9%) of respondents were answered that starvation and thrust, bite and change in behaviour, paralysis, salivation and hydrophobia are the clinical signs. Among the respondents 336(93.3%) were aware that rabies is transmissible from animal to human and 302(83.9%) respondents were aware that dog is the most common source of rabies. From the total respondents 357(99.2%) were answered that rabies is highly fatal disease (Table 2 below).

Table 2: Knowledge of participants regarding to cause, mode of transmissions, clinical sign, fatal nature and host range of rabies in Assosa town

Characteristics	Frequency/number	Percent (%)
Cause of rabies		
Virus	225	62.5
Starvation and thirst	62	17.2
Psychological problem	6	1.7
Associated with sprit	9	2.5
I do not know	58	16.4
Mode of transmission		
Biting	75	20.8
Scratching	5	1.4
All	265	73.6
I do not know	15	4.2
Transmitted from animal to human		
Yes	336	93.3
No	18	5
I do not know	6	1.7
Clinical signs		
Biting and change in behaviours	41	11.4
Stops eating and drinking	27	7.5
Salivation	8	2.2
All	284	78.9
Easily treatable after the onset of clinical sign		
Yes	42	11.7
No	210	58.3
I do not know	108	30
Is rabies a fatal disease		
Yes	357	99.2
No	3	0.8
Common source of rabies		
Dogs	302	83.9
Wild canine (Fox, hayna...)	49	13.6
I do not know	9	2.5
Highly susceptible host for rabies		
Dogs and cattle	134	37.2
Wild animal	15	4.2
Human and dos	192	53.6
All	19	5.3
Community at risk		
Children	**254**	**70.6**
Old people	**4**	**1.1**
All	**102**	**28.1**

3.4. Practices, Measures and Attitudes to Prevent and Control Rabies Among Study Respondents

The result of the findings indicated that about 81(22.5%) respondents have a dog and 23(28.4%) of them control their dogs in secured cage, 33(40.7%) tie in the compound. Out of the total dog owners, 47(58.1%) had vaccinated their dog. From the whole respondents, 63(17.5%) take killing measure for stray dogs and 202(56.1%) do nothing. 322(89.4%) of respondents believe in depopulation of stray dogs,141(39.2%) take killing action for rabid dog or animal 322(89.4%) have positive attitude for anti-rabies vaccine. 163 (45.3%) of the respondents washed the wound with water and soap immediately during dog or animal bite as first aid and 329(91.4%) seek medical care from hospital or nearby health center, 241(66.9%) were aware of taking anti-rabies vaccine immediately after a suspected animal/dog bite can bring effective prevention. 294(81.7%) of respondents heard information from informal source like from family, friends, traditional healers, neighbours, teachers and 50(13.9) of study participants from formal (radio/television), books/magazines, and others 16(4.4) from mixed source. Eighty one (22.5%) of respondents had a dog out of the total participants 22(6.1%) study participants experienced on previous rabid dog bites (**Table 3**) below.

Table 3: Practices, measures and Attitudes to Prevent and control rabies among study respondents of Assosa town

Characteristics	Frequency/number	Percent (%)
Do you have adog?		
Yes	81	22.5
No	279	77.5
How do control your dog? (For dog owner only)		
In secured cage	23	28.4
Tie in the compound	33	40.7
Lie free	25	30.9
Stray dogs control method		
Killing	63	17.5
Use of animal birth control	11	3.1
Aware to the owner	82	22.8
Tying	2	0.6
I do nothing	202	56.1
Believe in depopulation of stray dogs		
Yes	322	89.4
No	38	10.6
Attitude towards anti-rabies vaccine		
Positive	322	89.4
Negative	1	0.3
Neither of them	37	10.3
Action taken for rabid dog/animal		
Let free	184	51.3
Tying	3	0.8
killing	141	39.2
Aware to the concerned bodies	32	8.9
Have you ever vaccinated your dog? (for dog owner only)		
Yes	47	58.1
No	34	41.9
Willingness to vaccinate dogs (for dog owners only)		
Yes	78	96.3
No	3	3.7
Reasons for not vaccinated your dog		
Lack of awareness about availability of the vaccine	27	79.4
Shortage of vaccine	0	0
Financial problem	7	20.6
None reliability of the vaccine	0	0
Have you ever get training about rabies disease		
Yes	3	0.8
No	357	99.2
Presence of traditional medicine in and around Assosa town		
Yes	94	26.1
No	20	5.6
I do not know	246	68.3
Believe in traditional medicine		
Yes	169	49.9
No	191	53.1
Source of information about rabies		
Formal (radio, television, magazine, etc)	50	13.9
Informal (from family, friend, traditional healers, teachers.)	294	81.7
Mixed	16	4.4
Have you ever bitten by rabid dog/animal		
Yes	22	6.1
No	338	93.3
Immediate first aid for rabid dog/animal bite		
Wash the wound with water and soap	163	45.3
Apply herbal extract	4	1.1
Tying the wound with cloth	177	49.2
I do not know	16	4.4
Measure after first aid		
Taking to health center for vaccination	246	68.3
Holly water/praying	16	4.4
Traditional healers	98	27.3
Seek medical care during dog/animal bite		
Yes	329	91.4
No	31	8.6
Stage of anti-rabies vaccine effectiveness		
Immediately	241	66.9
Certain time later	5	1.4
At any time	26	7.2
I do not know	88	24.4

3.5. Factors Associated with Community KAP on Rabies

Association between independent variables and KAP scores on rabies was calculated using Pearson's Chi square (Table 4). There was strong association between KAP scores and sex (x^2 = 5.885, p = 0.020). Although the difference was so small, the good scores were higher in males (35.83%) than females (34.72%). Educational level was significantly associated with KAP scores (x^2 = 1.022, p= 0.000). Respondents with first degree and above (23.89%) had higher percentages of good rabies knowledge compared with those who had only finished primary school (9.7%), secondary and preparatory school (8.3%), and illiterate (2.2%). Occupation had statistically significant association with KAP score (x2 = 72.024, p=0.000) with the highest KAP score levels were observed in government employee (37.22%) while the lowest was among unemployed (6.66%). Moreover, statistically significant difference was observed among household size groups in the level of KAP score of respondents (x2=11.136, p=0.004) (**Table 4)** below.

Table 4: Relationships Between KAP Scores About Rabies and Some Key independent Variables Among Study Respondents of Assosa Town (N=360), 2015

Variables	KAP score			
	Good	Poor	χ^2	P value
Gender				
Male	129(35.83%)	39(10.83%)	5.885	0.020
Female	125(34.72%)	67(18.67%)		
Age				
18-30	154(42.78%)	65(18.05%)		
31-46	95(26.39%)	28(7.78%)	18.503	0.000
>46	5(1.38%)	13(3.6%)		
Educational status				
First degree and above	86(23.89%)	1(0.28%)		
College	95(26.39%)	23(6.39%)		
Secondary and preparatory (9-12)	30(8.3%)	28(7.78%)		0.000
Primary school (1-8)	35(9.7%)	21(5.83%)	1.022	
Illiterate	8(2.2%)	33(9.2%)		
Household size				
1-3	108(30%)	29(8.05%)		
4-6	135(37.5%)	65(18.056%)	11.136	0.004
>6	11(3.056%)	12(3.33%)		
Occupation				
Government employee	134(37.22%)	9(2.5%)		
Private employee	5(1.389%)	2(0.55%)		
Merchant	45(12.5%)	23(6.388%)		
Unemployed	24(6.66%)	35(9.72%)	72.024	0.000
student	46(12.77%)	37(10.28%)		
Dog ownership				
Dog owners	65(18.05%)	16(4.44%)	4.416	0.037
None dog owners	190(52.77%)	79(24.72%)		

4. Discussion

The result of the present study indicated that almost all respondent had previously heard about rabies from different sources and 70.6% of the respondents had good level of knowledge, attitude and practices (KAP) about rabies. This finding was in consistent with the report made by (Tadesse *et al*., 2014) in that 64.1% of respondents were familiar with rabies and had good KAP score level in Bihar Dar, Ethiopia. However, the finding of this study is much higher than the result of (Praveen *et al*., 2013) in which only 25.5% of participants were well aware regarding rabies and its prevention in Urban Mysore. This difference could be due to difference in target population and sample size. In addition to this the presence of traditional healers who have sold rabies traditional medicine on the street occasionally in the present study may make the respondents well aware of the disease. In contrast to this finding, higher knowledge, more positive attitudes and higher scores in practice indicators regarding rabies was reported from Sri Lanka (Gino *et al.,* 2009). This difference

probably is explained by the lack of health education programs about rabies in Ethiopia which supported the present findings in that 99.2% had never got training about rabies in the study area.

Sex-wise comparison of scores in this study indicated that good scores were slightly higher in males (35.83%) than females (34.72%) which showed a statistically significant difference between the two sexes. This might be due to increased activity of males in their daily life compared with females and better chance of acquiring correct information about rabies. The other factor identified to be significantly associated with knowledge, attitude and practice on rabies was educational status. Thus, statistically significant association (χ^2 = 1.022, p=0.000) was observed between KAP score and educational levels whereby higher levels of educations were associated with higher KAP scores. All respondents with first degree and above education levels had good KAP of rabies. The possible explanation of this could be educated person would have better information access and can easily understand the disease. This finding was supported by the result of the study conducted in Flagstaff (Andrea and Jesse, 2012).

The present result indicated that more than half (62.5%) of respondents knew the virus as the cause of rabies, and the present finding was in agreement with the result reported by Noden *et al*., 2014) in that 53.1% respondents had good knowledge and practice in North Namibia with regard to rabies and pet care. This result is higher when compared to the result obtained (18%) in and around Gondar town north-west Ethiopia by (Kassaw *et al*., 2014). It is probably due to difference in community knowledge and the educational status of the respondents, and partly may be due to difference in sample size.

In the present study, 73.6% of respondents knew the correct mode of transmission which is in consistent with the finding of (Eshetu *et al.,* 2012) who reported that 73.4% of the respondents answered correctly concerning mode of transmission of rabies in from Addis Ababa, Ethiopia; However, the study conducted in Mana and Limmukosa Districts of Jimma Zone, South West Ethiopia by (Tirist *et al*., 2013) indicated that higher proportion of study respondents (92.2%) had correct responses regarding the mode of transmission compared to the result of the present finding and the possible reason could be due to better source of information of the respondents in Jimma area than the respondent of the present study site.

The finding of the current study show that 99.2% of respondents were aware that rabies is a highly dangerous and fatal disease, 78.9% knew the correct and common clinical signs, Moreover, 93.3% participants knew that rabies can be transmitted from infected animal to human. This finding is in agreement with the finding of (Tadesse *et al*., 2014) in Bihar Dar, 94.9% of whose respondents answered that the disease is fatal, 76.8% knew common clinical signs, 94.9% were aware that rabies can be transmitted from infected animal to human.

The present finding indicated that dogs were identified as a common source of rabies by 71.3% of respondents the result which is in consistent with the study conducted in the city of New York, USA, in which case 73.5% of the respondents identified that dogs are the major sources for the spread of rabies in human population (Eidson *et al*., 2004). The present result also agreed with the findings of (Tadesse *et al*., 2014), whose result showed 71.3% in Bihar Dar, Ethiopia; 96.3% of the respondents were aware that dogs are reservoirs of rabies, had knowledge and practice of resident in Namibia town with regard to rabies and pet care (Noden *et al*., 2014) and 83.4% reported that dogs are source of infection for rabies in and around Gondar town, North West Ethiopia (Shumuye *et al.,* 2014).

In the present study, 45.3% of the respondents knew that wound washing is immediate action after rabid dog or animal bite. This finding is highly lower than study made in Bhutan (Tenzin and Bir, 2013). This difference might be due to the fact that respondents of the present study believed that the infection could be treated with traditional medicine and tie the wound with cloth in attempting to prevent bleeding. Additionally most of respondents practiced that they burn the wound by applying butter, animal fat or honey on the wound to prevent infection. This finding is in agreement with surveys made in India's population in which case 42% preferred household treatment such as chilli application (Agarwal and Reddaiah,2003) in that 46.9% participants of the present study had strong belief on the use of traditional medicine. Even though most respondents use traditional medicine as treatment, the majority 91.4% of participants additionally seek medical care from hospital or the nearby health center after being bitten by dogs; similarly in Sri Lanka almost all respondents agreed to consult health professional in case of dog or animal bite (Gino *et al*., 2009).

In the current study, 89.4% of the respondents indicated that depopulation of stray dogs is effective measure for controlling the disease in the study town. This finding was in consistence with results recorded in Sir Lanka in which case the majority of the participants were in favour of rabies control programs that mainly focused on stray dog population control (Gino *et al*., 2009).

5. Conclusion

This study has shown that the community level KAP about rabies is good in the study area, despite

this fact, there are still some KAP gaps in the community regarding the modes of transmission, clinical signs of, prevention methods of rabies after suspected animal bite; the first action taken in the home after bitten by a suspected dog or animal (wound washing with a soap and water) and attitude to anti-rabies vaccine. This lack of critical knowledge about rabies undoubtedly results in unnecessary deaths. In order to correct the knowledge gaps highlighted in this study, there is a need for a national rabies control program emphasising preventative behaviours, especially simple messages that address major knowledge gaps like "all mammals suffer from rabies", "bury or burn carcasses of dead rabid animals", "vaccinate your dogs against rabies", "immediately wash your wound with water and soap and seek PEP after a bite from a rabid animal". This information could be channelled through media, community meetings and professionals' including community health workers, teachers, livestock officers and clinicians. Gender, age, educational status, occupational status and house hold size of the respondents were the variables found to be significantly associated with KAP on rabies. To conclude, educational information should be incorporated in school curricula so that children are made aware of the dangers of rabies; National rabies education campaigns should address knowledge gaps and improve rabies control and prevention practices; attention should be paid to all bites from suspect animal as all mammals suffer from rabies and burying or burning the carcass of suspect rabid animal could stop transmission of rabies.

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