

Knowledge & Practice Regarding Animal Bite among Bite Victims Attending OPD Services in Karukachal (Tamil Nadu)

Midhu Elsa Jacob¹, Jessy Mathew²

Abstract

An animal bite is an injury caused by the mouth and teeth of an animal including humans. The present study was conducted in 2023 with the objective to assess the knowledge and practice regarding animal bite among bite victims attending OPD services of CHC, Karukachal. A descriptive research design & convenient sampling technique were used to conduct the study among 50 animal bite victims attending OPD services of CHC, Karukachal. The data were collected using self-structured knowledge and practice questionnaire. The data were analysed by using descriptive statistics. The results showed that most of the samples (84%) had average knowledge regarding animal bite. Also, 90 percent of samples cleaned the area of animal bite using soap and water; 50 percent cleaned the area thoroughly for 15 minutes, 76 percent of samples kept the suspected animal under observation. Twenty-six percent applied antiseptic solution or creams to the affected area, 76 percent consulted the doctor at the day of bite itself. All the samples were got vaccinated against rabies after animal bite. The study concluded that improved community awareness regarding animal bite and its management is required to fight against rabies.

Key words: Knowledge & practice, Animal bite victims, Community awareness

Bites by animals carrying venoms, toxins and pathogens are significant cause of morbidity and mortality worldwide. Rabies is an acute viral disease that causes fatal encephalomyelitis in virtually all warm-blooded animals including man. Rabies, also known as hydrophobia is an acute, highly fatal viral disease of the central nervous system. It is vaccine-preventable disease caused by Lyssavirus type 1 within the family Rhabdoviridae. It is primarily a zoonotic disease of warm-blooded animals, particularly carnivorous such as dogs, cats, jackals and wolves. It is transmitted to man usually by bites or licks of rabid animals. Classical hydrophobia is clinically characterised by a long and variable incubation period, a short period of illness due to encephalomyelitis ending in death, despite intensive care. It is the only communicable disease of man that is always fatal.

Rabies in man is a dead-end infection, and has no survival value for the virus. The overwhelming number of victims in India belong to the age group 1-24 years. Laboratory staff working with rabies virus, veterinarians, dog handlers, hunters and field naturalists face bigger risks of rabies than do general public. The incubation period in man

is highly variable, usually 1-3 months following exposure but may vary from 7 days to many years.

Need for the study: Dog or animal bite victims constitute an important and very common part of daily OPD services and emergency departments of all CHCs and PHCs for anti-rabies treatment. The anti-rabies treatment, namely post-exposure prophylaxis is a life-saving treatment in definite rabid animal bite. It has three main components, namely wound treatment, anti-rabies vaccine, anti-rabies serum + advice and it should be timely and appropriately given (Ahmed et al, 2020).

According to CDC dog bite statistics, more than 4.5 million people report being bitten by dogs each year in the United States. More than 800,000 people per year report requiring medical attention for their dog bites. According to WHO estimates, about 30-60 percent of dog bite cases and deaths occur in children. Rabies alone kills 20,000 people in India every year, which is about 36 percent of the world cases. According to the animal welfare department, there are 2,89,986 stray dogs in the state. In Kollam and Thiruvananthapuram alone, there are 1 lakh dogs. Of this, only 18,852 were sterilised. Data also shows that both these districts witnessed the maximum dog bite cases.

The data suggests that from January 2022 to July 2022 over 14.50 lakh people have become the victims of animal bite. Maharashtra reported the

The authors are: 1. Senior Lecturer, 2. Assistant Professor both at St. Thomas College of Nursing, Chethipuzha, Kottayam (Kerala).

most dog bite cases in 2022 with 3,46,318 cases. Tamil Nadu comes second with 3,30,264 reported cases and Andhra Pradesh comes third at 1,69,378 reported cases.

The Community Health Centre, Karukachal is a secondary level health care covering a population of 2,44,165. In present study, the researchers tried to find out the prevalence, knowledge and practice regarding animal bite.

Objectives

The study was set out to assess the knowledge and practice regarding animal bite.

Review of Literature

A descriptive research design was conducted in 2022 to assess the level of knowledge regarding first aid management of dog bite among general population at in a selected community of Thrissur. The sample size consisted of 50 cases selected by convenience sampling technique. A structured knowledge questionnaire was used to collect the data. The results showed that majority of samples belonged to 36–40 years. There were 36 percent males and 64 percent females in the general population. Twelve percent of the general population had a history of dog bite in the family, 22 percent population had rearing of pet animals in home, 38 percent of the general population had knowledge regarding the first aid management of dog bite, 98 percent had a history of participation in any awareness programmes. Majority of the subjects had moderate level of knowledge (68%). The study revealed that there is a significant association between knowledge regarding first aid management of dog bite among general population with their selected demographic variables such as history of dog bite ($\chi^2 = 7.68$, TV = 5.99) and previous knowledge regarding first aid management of dog bite ($\chi^2 = 6.688$, TV=5.99). The study findings can be used to improve the knowledge regarding first aid management of dog bite in the general population.

A cross-sectional study was conducted in 2021 to assess the knowledge, attitudes and practices on rabies among 95 human and animal health professionals in the Kaffrine district, central Senegal. Convenient sampling technique was used to select the samples. A pre-test questionnaire was used to collect the data. The results showed that professionals who worked in urban areas (AOR = 11.10; 95% CI = 3.50–41.69) and who worked in animal health (AOR = 7.45; 95% CI = 1.16–70.40) were more likely to have sufficient knowledge about rabies. Professionals with tertiary education (AOR = 12.40; CI 95% = 1.80–268.00) and with sufficient knowledge (AOR = 3.41; CI 95% = 1.01–12.70) were

more likely to have a positive attitude about rabies. Professionals with a positive attitude about rabies (AOR = 3.23; 95% CI = 1.08–10.70) were more likely to have a good practice when presented with an animal bite case. The study concluded that, improving health professionals' knowledge about rabies is essential to influence their attitudes and practices against rabies.

A cross-sectional study was conducted in 2020 to assess the knowledge, attitudes, and practices (KAP) among 1015 bite victims visiting rabies prevention clinics in Wuhan, China. A multistage sampling technique was used to recruit participants. A self-structured questionnaire was used to collect the data. Results showed that only 56.85 percent of respondents knew that rabies is infectious. More than 20 percent of respondents thought that it is not usually necessary to vaccinate dogs and cats against rabies. About 70 percent of participants stated that they never need to be reminded to vaccinate when they were bitten. Lower education level (odds ratio = 3.77, 95% CI: 2.65–5.38 for secondary school or less and OR = 1.74, 95% CI: 1.28–2.38 for high school or vocational school, $p < 0.0001$) was independently associated with poor knowledge of rabies. Respondents who had experienced two or more times of animal bites (OR = 0.62, 95% CI: 0.39–0.97) were inclined to have appropriate attitudes about rabies prevention and control. Older respondents were more likely to show proper behaviours towards rabies prevention and control (OR = 0.44, 95% CI: 0.33–0.58 for age group 31–60 and OR = 0.34, 95% CI: 0.21–0.54 for age group >60, $p < 0.0001$). The study concluded that the level of rabies KAP among bite victims in China was suboptimal. It is necessary to conduct interventions focusing on improving public awareness of rabies and ameliorating behaviours of rabies post-exposure prophylaxis.

Methodology

A quantitative approach and non-experimental descriptive study design was adopted by the researchers. The study was conducted among animal bite victims attending OPD services of CHC, Karukachal. The sample size consisted of 50 animal bite victims. The sampling technique used was non-probability convenient sampling technique. The data were collected using a self-structured questionnaire administered in one-to-one basis. The tool constructed for the study had 3 parts: demographic profile of the participants such as such as age, sex, occupation, monthly income, education, pets rearing status, presence of nuisance with street animals, day of rabies vaccination, type of animal bitten, previous history of attack of street animals, previous information

regarding rabies and knowledge questionnaire and practice checklist were administered. The level of knowledge was scored as good (17-24), average (9-16) poor (0-8). The scoring of the practice is calculated by taking the percentage of individual items. The participants took about 15 minutes to mark their responses. The tools were collected back and active participation of all samples was ensured. The data obtained were analysed using descriptive statistics.

Inclusion criteria: The animal bite victims who were present during the data collection period, who can read Malayalam/English.

Exclusion criteria: The animal bite victims. Who were not willing to participate in the study.

Ethical consideration: The permission for conducting the study was obtained from the Medical Officer, CHC, Karukachal. Informed consent was taken from the participants who were covered in the study. Privacy and confidentiality of the samples were maintained. Subject had the right to discontinue from the study if they wished to do so.

Results

Socio Demographic Variables

Figure 1 shows that most of the samples (n=22, 44%) were from the age group of 40-59 years.

Figure 2 shows that most of the samples (n=30, 60%) were females.

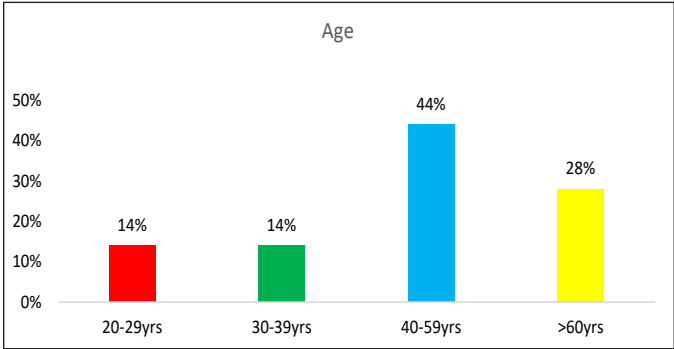


Figure 1: Percentage distribution of samples according to age.

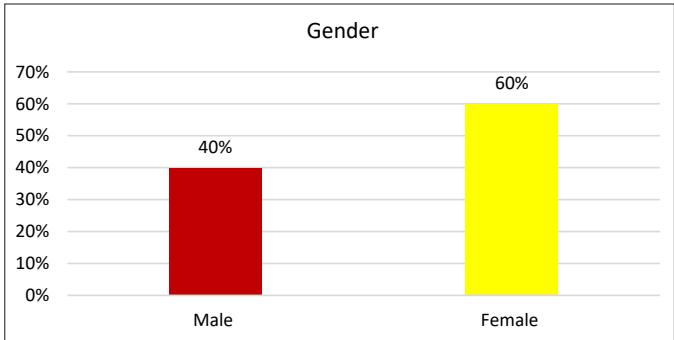


Figure 2: Percentage distribution of samples according to gender.

Figure 3 shows that most of the samples (n=33, 66%) were having other type of occupation.

Figure 4 shows that most of the samples (n=42, 84%) were from rural area.

Figure 5 shows that most of the samples (n= 28, 56%) had a monthly income of below Rs. 10,000/-

Figure 6 shows that most of the samples (n=16, 32% 16) were having primary educational status.

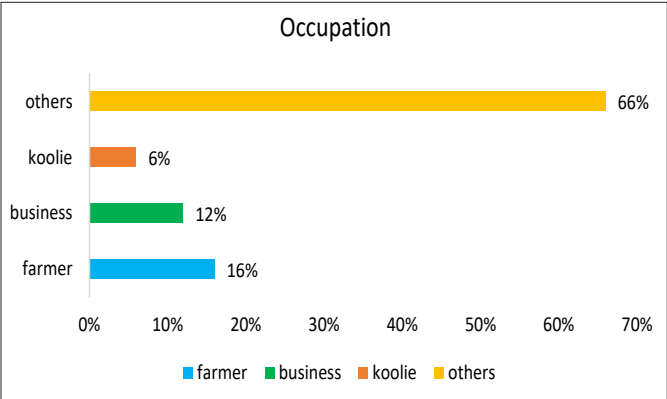


Figure 3: Percentage distribution of samples according to occupation.

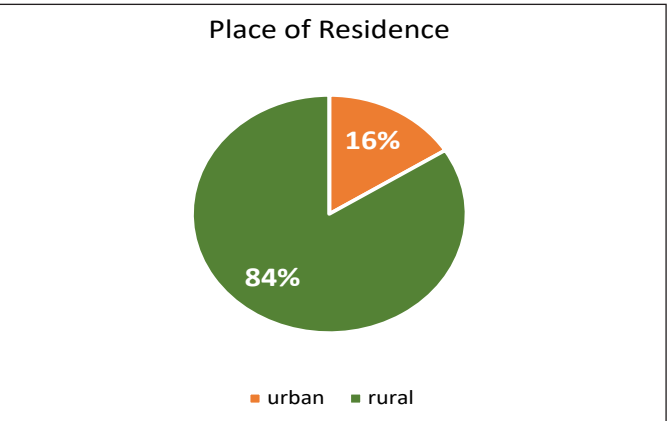


Figure 4: Percentage distribution of samples according to place of residence.

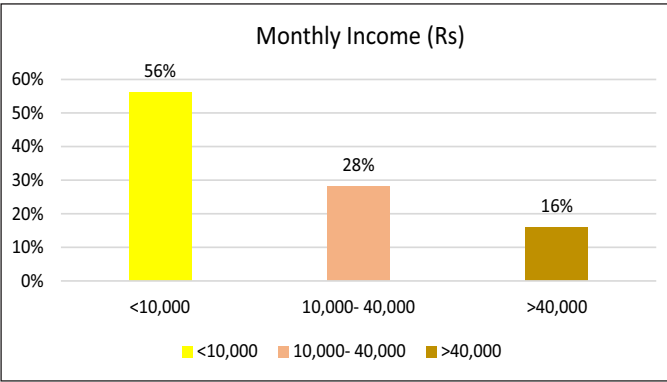


Figure 5: Percentage distribution of samples according to monthly income.

Figure 7 shows that most of the samples (n= 43, 23%) were dog bite victims.

Figure 8 shows that most of the samples (n=36, 72%) were having pet ownership.

Figure 9 shows that most of the samples (n=27, 54%) have presence of free roaming animals in their area.

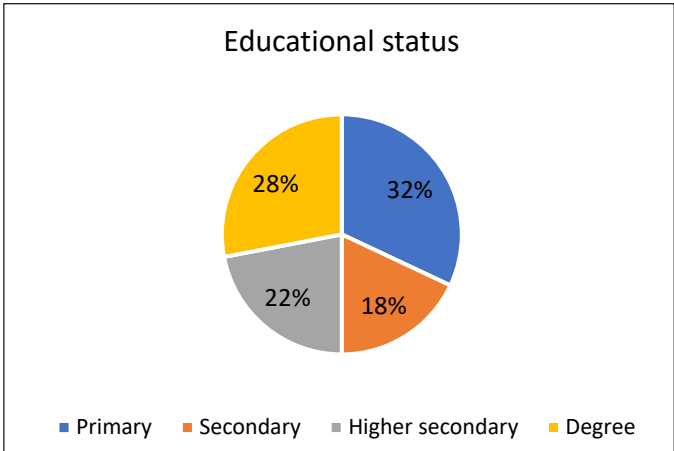


Figure 6: Percentage distribution of samples according to educational status.

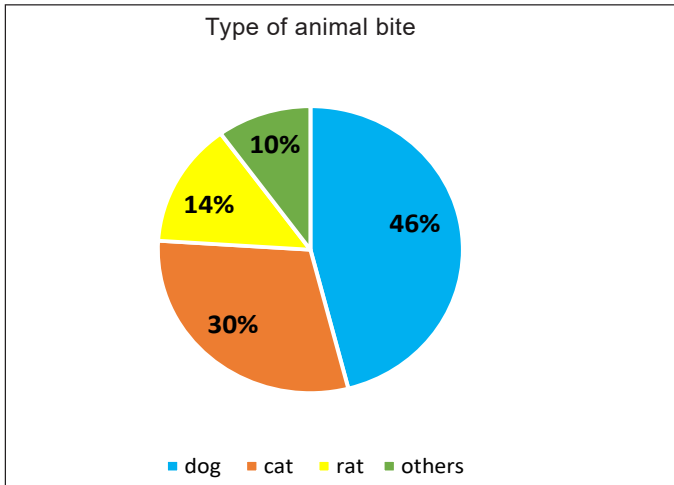


Figure 7: Percentage distribution of samples based on the type of animal bite.

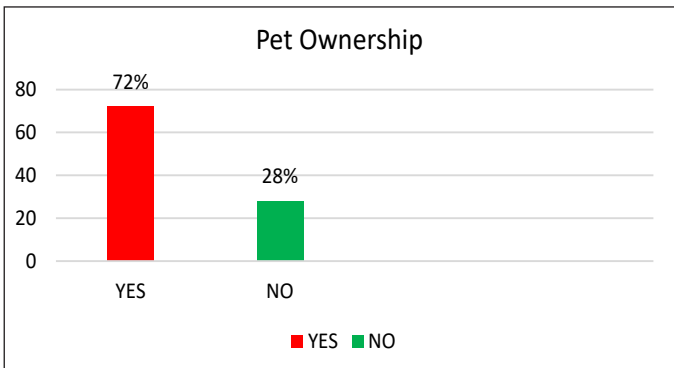


Figure 8: Percentage distribution of samples according to pet ownership.

Figure 10 shows that most of the samples, (n=19, 38%) were came to hospital for 0th day of vaccination.

Figure 11 shows that most of the samples (n=37, 74%) were having history of animal bite.

Figure 12 shows that most of the samples (n=20, 40%) were having knowledge regarding rabies from media.

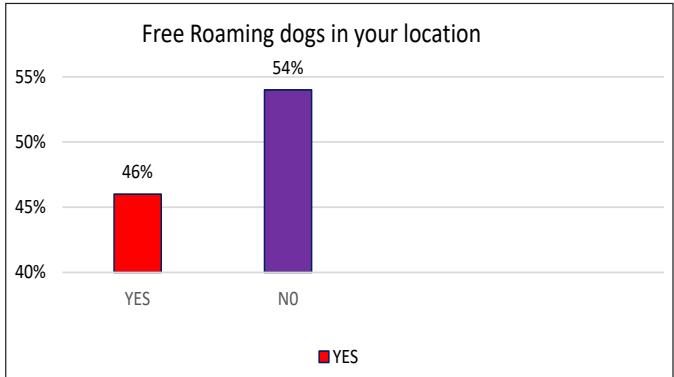


Figure 9: Percentage distribution of samples according to presence of free roaming dogs in your location.

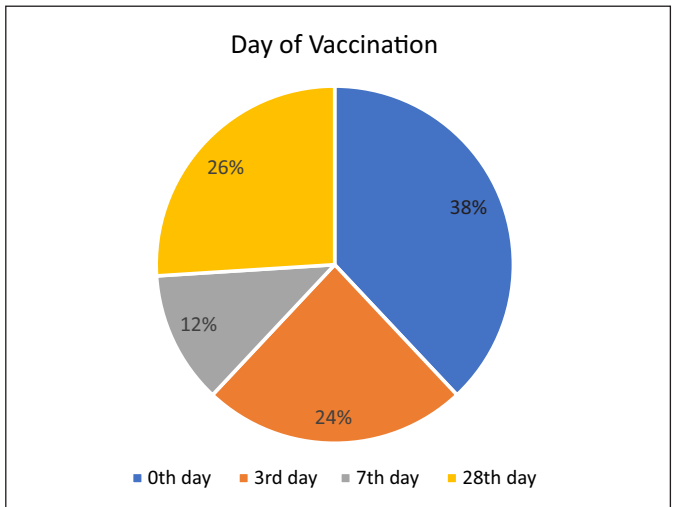


Figure 10: Percentage distribution of subjects according to which day of vaccination he/she came to hospital.

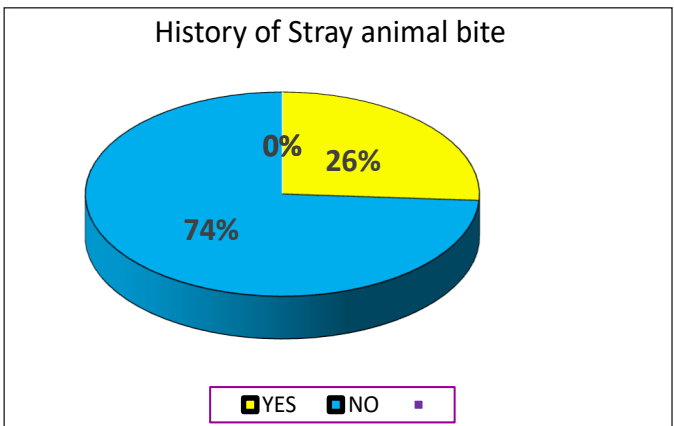


Figure 11: Percentage distribution of samples according to history of stray animal bite.

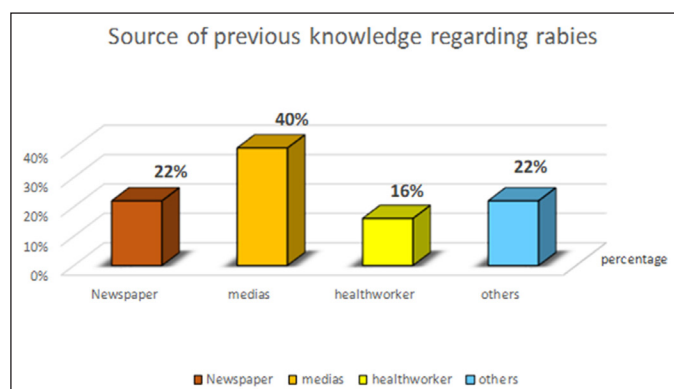


Figure 12: Percentage distribution of samples according to source of previous knowledge regarding rabies.

Distribution of Samples based on the Level of Knowledge

Table 1: Frequency and percentage distribution of samples based on knowledge level

Knowledge	Frequency	Percentage (%)	Mean	SD
Poor (0-8)	2	4	13.74	2
Average (9-16)	42	84		
Good (17-24)	6	12		

Table 1 shows that most of the samples (n=42, 84%) have average knowledge regarding animal bite. The mean score obtained was 13.74 and the Standard deviation.

Distribution of the Samples Based on Practice

Table 2: Frequency and percentage distribution of samples based on practice

Practice	Frequency	Percentage
Cleaned the area of animal bite using soap and water	45	90
The area is cleaned thoroughly for 15 minutes	25	50
The suspected animal was kept under observation	38	76
Antiseptic solution or creams are applied to the affected area	13	26
Consulted the doctor at the day of bite itself	38	76
Vaccination for rabies was taken after the animal bite	50	100

Tables 2 shows that 90 percent of samples cleaned the area of animal bite using soap and water; 50 percent cleaned the area thoroughly for 15 minutes 76 percent of samples kept the suspected animal under observation, 26 percent applied antiseptic solution or creams to the affected area, 76 percent consulted the doctor at the day of bite itself. All the samples were got vaccinated against rabies after animal bite.

Discussion

A descriptive study was conducted in 2017 to know the knowledge level and attitude on rabies and dog bite management among rural people present along with their dogs for treatment of various ailments at Veterinary College and Research Institute, Orathanadu, Thanjavur district (Tamil Nadu). A total of 50 people were selected by convenient sampling technique. A structured questionnaire was used to collect the data. Most of the dogs were semi-owned dogs (80%) and 62 percent of the dogs were never given antirabies vaccine. Vaccination was regularly followed in 14 percent and only during the free camps in 24 percent of the dogs. In the present survey, people's knowledge about the fatality of rabies was 100 percent and dog bite as the route of transmission was 90 percent, but the knowledge about observation of suspected dog for rabies for 10 days was limited to 22 percent. Awareness level on post-exposure prophylaxis in dog-bitten cases was little low. Only 20 percent people knew thorough wound washing, 32 percent about application of antiseptic, and 20 percent about administration of tetanus toxoid. Majority of the people (92%) stated that the wound should be closed. Knowledge on active immunisation was 100 percent but follow-up immediately after exposure was in 24 percent of the cases. Some people (34%) preferred traditional treatment. Nobody knew about the passive immunisation. It was concluded that even though people knew something about rabies transmission and post-exposure prophylaxis, awareness must be strengthened to increase the need for regular vaccination of their dogs and thorough wound washing for 10-15 minutes. The study concluded that public needs to be educated regarding the importance of application of antiseptics, administration of tetanus toxoid, immediate active immunisation by consulting the physician, not closing the dog bitten wound and need of passive immunisation.

In the current study, most of the samples (n=22, 44%) were from the age group of 40-59 years. Majority of the samples (n=30, 60%) were females, most of the samples (n=23, 46%) were bitten by dogs. Majority of the samples (n= 36, 72%) had pet ownership. Most of the samples (n=27, 54%) had presence of free roaming animals in their area; 19 (38%) came for 0th day of vaccination, most of the samples. (n=37, 74% were having previous history of animal bite, majority of the samples (n=20,40%) were having knowledge regarding rabies from media. Among 50 samples most of the samples (n=42, 84%) had average knowledge regarding

animal bite. The mean score obtained was 13.74 and the standard deviation was 2. Out of samples, 50 (90%) cleaned the area of animal bite using soap and water, 50 percent cleaned the area thoroughly for 15 minutes, 76 percent kept the suspected animal under observation, 26 percent applied antiseptic solution or creams to the affected area, 76 percent consulted the doctor at the day of bite itself, and all the samples were got vaccinated against rabies after animal bite. The current study enforces the importance of conducting awareness session for the public regarding rabies and first aid management of animal bite to improve the knowledge and practice level.

Limitations

- The size of the samples was too small to draw generalisation.
- The study samples limited to animal bite victims attending OPD services of CHC, Karukachal.
- Long-term follow-up could not be carried out due to time constraints.

Recommendations

- A similar study can be conducted on a large sample which may yield more reliable result.
- A similar study can be undertaken to assess the effectiveness of rabies vaccination.
- A comparative study can also be conducted between those who are vaccinated, and not vaccinated against rabies.

Nursing Implications

Findings of the present study have implications in the nursing practice, nursing administration, nursing education and nursing research. The knowledge and practice regarding animal bite can be implied in the field of nursing practice, especially community health nursing practice, so that it will helps improve the knowledge and practice of the public in case of animal bite. The nurse administrators can assess the educational need of the public regarding animal bite. They can implement various strategies to deal with the animal bite cases. The nurse educator should know about the animal bite and its management. The results of the study have opened up avenues for further studies and dissemination of studies will improve the public health.

Conclusion

The focus of this study was on assessing the knowledge and practice regarding animal bite among bite victims attending OPD services of CHC, Karukachal. Among 50 samples, most of

the samples (n=42, 84 %) had average knowledge regarding animal bite. The mean score obtained was 13.74 and the standard deviation was 2. Out of 50 samples, 90 percent cleaned the area of animal bite using soap and water 50 percent cleaned the area thoroughly for 15 minutes, 76 percent kept the suspected animal under observation, 26 percent applied antiseptic solution or creams to the affected area, 76 percent consulted the doctor at the day of bite itself. All the samples (100%) were got vaccinated against rabies after animal bite. The study concluded that improved community awareness regarding animal bite and its management is required to fight against rabies.

References

1. Ahmed T, Hussain S, Zia UR, Rinchen S, Yasir A. Ahmed WA, et al. Knowledge, attitude and practice (KAP) survey of canine rabies in Khyber Pakhtunkhwa and Punjab Province of Pakistan. *BMC Public Health* 20, 2020; Article No.1293
2. Bahiru A, Molla W, Yizengaw L, Mekonnen SA, Jemberu WT. Knowledge, attitude and practice related to rabies among residents of Amhara region, Ethiopia. *Heliyon* 2022 Nov 3; 8(11): 11366
3. Chowdhury R, Mukherjee A, Naskar S, Lahiri SKumar. A study on knowledge of animal bite management and rabies immunization among interns of a Government Medical College in Kolkata. *International Journal of Medicine and Public Health* 2013; 3(1): 17-20
4. Dandan Li, Qiaoyan Liu, Fan Chen, Qingqing Jiang, Tian-tian Wang, Xiaoxv Yin, et al. Knowledge, attitudes, and practices regarding rabies and its prevention and control among bite victims by suspected rabid animals in China. *One Health* 2021;13:100264, ISSN 2352-7714
5. Dehgorji NR, Adham D, Abazari M, Mordi Asl E. Epidemiological Study of Animal Bites and Rabies in Bandar Astara City. *International Journal of Zoology and Animal Biology* 2016 March; 2 (2): 1-5
6. Khazaei S, Karami M, Veisani Y, Solgi M, Goodarzi S. Epidemiology of animal bites and associated factors with delay in post-exposure prophylaxis: A cross-sectional study. *Bull Emerg Trauma* 2018 Jul; 6(3): 239-44
7. Malla TK, Pattanayak S. Epidemiological study of animal bite victims and admission in general surgery department, in Southern Odisha. *International Surgery Journal* 2017 Oct; 4(10): 322-25
8. Roy P, Nandimath VA, Bhadake KH. A cross-sectional study on knowledge, attitude and practice regarding rabies among patients attending a tertiary care centre, Solapur Maharashtra. *International Journal of Community Medicine and Public Health* 2023; 10(9): 3324-31
9. Sivagurunathan C, Umadevi R, Balaji A, Rama R, Gopalakrishnan S. Knowledge, attitude, and practice study on animal bite, rabies, and its prevention in an urban community. *Journal of Family Medicine & Primary Care* 2021 Feb; 10(2): 850-58