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Original Article

Awareness and practices of rabies and animal bite management among victims who attended the OPD services at Avissawella Base Hospital, Sri Lanka

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Abstract

Animal bites are one of the major causes for morbidity and mortality worldwide. Rabies is life threatening viral disease transmitted through animal bites. Proper management of bite wound is essential in prevention of complications of animal bites. Objective of the study was to assess the awareness and practices regarding rabies and animal bite management among victims. Descriptive cross-sectional study was conducted among the randomly selected 187 victims of animal bites who attended the Avissawella Base Hospital. A pre-tested interviewer-administered structured questionnaire was used to collect data. Descriptive statistics and chi square test were used for data analysis and SPSS 23 was used as the statistical analysis tool. The age of the respondents ranged from 15 to 60 years of age. Among the participants 59% were male while the 41% were female. Among the victims,70.1% bites occurred due to dogs, 28.3% due to cats and 1.6% due to rats. Further, 95.7% of the victims had washed the wound site with soap and water and 90.4% had sought hospital treatment on the day of the bite. Only 17 (9.1%) of study participants knew the microorganism as cause of rabies. Knowledge was poor regarding other animals, that could transmit rabies and modes of transmission other than bites (39.8%). Moreover, excessive salivation was identified by 41.6% of the participants as a clinical manifestation of rabies in animals, while knowledge of other signs of affected animals such as altered personality (24.0%), fear to drink water (19.5%), fits (14.9%) were poor. The awareness and practices regarding rabies and animal bite management among animal bite victims were poor and awareness programs must be conducted for the public in order to prevent rabies and animal bites.

Keywords: Awareness, Practices, Rabies, Animal bite, Victims

Introduction

Animal bites are one of the major causes of morbidity and mortality worldwide (Baxter, 2012; Haupt,1999). Animal bites are defined as "an injury caused by the mouth and teeth of an animal resulting in direct tissue damage, deep anatomical structure disruption, introduction of infectious agents and envenomation" (BMJ Best Practice, 2016). Animal bites can result in serious injuries and exposure to many diseases caused by microorganisms and it is a major worldwide public health concern today as the number of cases are increasing (Abrahamian & Goldstein, 2011; Cantas & Suer, 2014). Rabies is transmitted through animal bites (Jackson, 2006). Further, it causes nearly ten thousand of deaths annually, mainly in Asia and Africa. Every year, more than 15 million people worldwide receive post exposure prophylaxis. This is estimated to prevent thousands of rabies deaths annually. Animal bites commonly from dogs, cats, bandicoots, mongoose, goats, rabbits, squirrels and many more. Among them, most common bites include dog and cat bites and dog bites are estimated to account for approximately ten million injuries annually. Dogs account for 76-94% of animal bite injuries while cat bites account for 2-50% of injuries related to animal-bites (WHO, 2017).

In Sri Lanka, 26 cases were detected in 2015 and 75% of them were due to dog bites. Rabies is a fatal zoonotic, viral disease caused by Lyssa virus which is 100% preventable through vaccinations of pet animals and proper post exposure therapy. The virus is transmitted through bites, licks on abraded skin or intact mucosa by infected animals (Fernando, Mallikahewa, & Gunasekara, 2015).

Management of bite wound is essential in the prevention of complications of animal bites. Extensive washing and flushing of the wound for a minimum of 15 minutes with soap and water, detergent, povidone iodine or other substances that kill rabies virus,. followed by a course of effective rabies vaccine which meets the WHO standards and administration of Rabies Immunoglobulin (RIG) has to be initiated immediately after exposure (WHO, 2017).

Lack of public awareness towards animal bites is a major problem in prevention and control of the rabies. Knowledge regarding causative agent, mode of transmission, first aid for bite wound, post exposure treatment and other rabies preventable measures are essential for development and enhancement of strategies to prevent and manage animal bites and Rabies (Aga, Hurisa, & Urga, 2016). Objective of the study was to assess the awareness and practices regarding Rabies and animal bite management among victims.

Methodology

Descriptive cross-sectional study was conducted among randomly selected 187 victims of animal bites who attended the OPD services of Avissawella Base Hospital. Ethical approval was obtained from the ethics review committee of KIU and permission was obtained from the director of the Avissawella Base Hospital. A pre-tested interviewer administered structured questionnaire was used to collect data. The questionnaire consisted of 3 sections which was designed to obtain demographic data of the participants, knowledge and practices regarding animal bites. Further, the questionnaire was pretested with 10 animal bite victims who were not included in the main study sample. Descriptive statistics and chi square test were used for data analysis and SPSS 23 was used as the statistical analysis tool.

Results and Discussion

A total of 187 animal bite victims were enrolled in this research. Age, gender, educational level and employment status of the participants were assessed as the demographic characteristics. The participants belonged to 15 to 60 years of age.

Table 1. Demographic characteristics of the participants (n = 187)

Demographic characteristics	Frequency	Percentage
Gender		
Male	112	60
Female	75	40
Age in years		
> 25	46	24.6
26 - 35	45	24.1
36 - 45	45	24.1
46 <	51	27.2
Educational level		
Never been to school	104	55.6
Primary education	65	34.8
Secondary education	12	6.4
Tertiary education	6	3.2
Employment status		
Employed	98	52.4
Unemployed	89	47.6

Among the participants, 67.4% were pet owners and among them most victims (55.6%) had dogs as their pets. Among the 126 pet owners only 46% had vaccinated their pets.

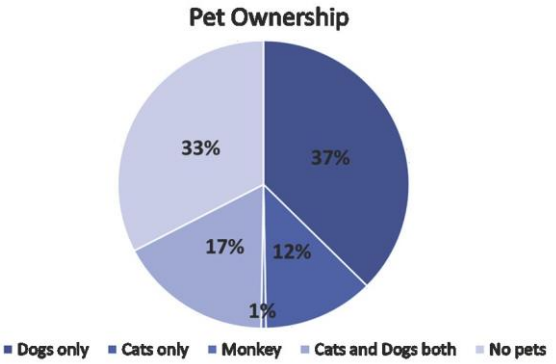

Fig. 1. Pet ownership of the participants. (n = 187)

Participants were assessed regarding awareness on cause for Rabies, mode of transmission, first aid for bite wound, post exposure treatment and other rabies preventive measures. Only 9.1% of study participants knew that a microorganism caused Rabies. Regarding the animal reservoirs of rabies, 98.4% of the participants had knowledge that dogs cause rabies, meanwhile other reservoirs of rabies were not correctly identified by the majority of the participants. Knowledge was poor regarding other animals that could transmit rabies and modes of transmission other than bites (figure 02, 03). Further, excessive salivation was identified by majority (81.6%) as a clinical manifestation of rabies in animals, while knowledge of other signs (Altered behaviours 24.0%, Hydrophobia - 19.5%, Seizures-14.9%) were poor. Majority of the participants (89.3%) had proper knowledge on how to initialize the first aid treatment for an animal bite which is washing the wound with soap and water, and 95.2% of respondents knew that vaccination of the animals is one of the important precautions to be taken to prevent rabies. Regarding the high risk sites, among the 187 respondents 59.7%, 50%, 34.4%, 19% identified head, genitalia, Face and neck respectively.

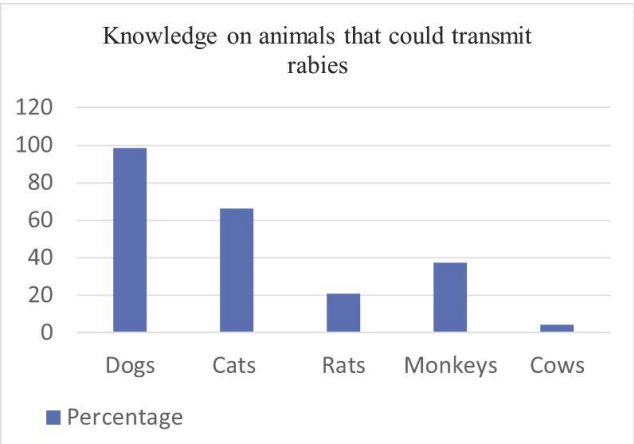

Fig. 2. Types of animals that could transmit rabies (n = 187)

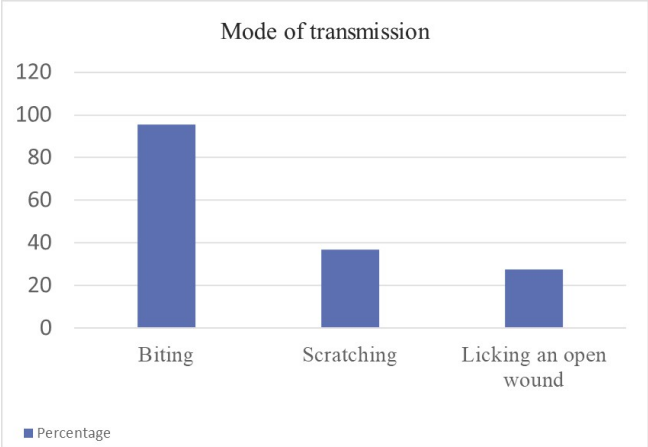

Fig. 3. Mode of transmission Rabies (n = 187)

Attitudes of the participants regarding rabies prevention were assessed using five questions. As stated in table 02 majority had good attitudes regarding vaccination and stray dogs elimination to prevent rabies.

Table 2. Attitudes regarding rabies and animal bites

Questions	Yes	No
Rabies can be prevented	83.4%	16.6%
Vaccination against rabies could prevent rabies	89.8%	10.2%
Rabies elimination is important	93%	7%
Vaccination can prevent developing rabies if a person is bitten by a rabid dog	63.4%	36.4%
Elimination of stray dogs can reduce the transmission of rabies in communities	72.2%	27.8%

The study revealed that the awareness regarding rabies and animal bite management were poor among victims. Similar research done by Muthunuwan, et al., 2017 found that only 6.9% (n = 275) of study participants knew dog as the only animal reservoirs of the rabies. Possible reason could be due to the fact that most anti rabies campaigns were aimed to control community dog population, dog vaccination, dog bite management. The study revealed that among 126 pet owners only 46% had vaccinated their pets. Similar study done in Eastern India found that among the animal bite victims, 97.9% (n =119) were due to their own animals. Most of the pet owners had not vaccinated their pets. Most attacks were encountered to upper limb (47.1%), lower limb (42.2%), chest (6.4%), face (4.3%) respectively (Chaudhuri, 2015). Some studies have found that the consecutive pet vaccination has a significant impact on reduction of rabies transmission (Nandi & Kumar, 2010; Seneschall & Luna-Farro, 2013; Day, Horzinek, Schultz, & Squires, 2016).

Conclusion

The study revealed that the awareness and practices regarding rabies and animal bite management were poor among animal bite victims. Awareness programs must be conducted on the animal reservoir of rabies, modes of transmission and initial management of the wound and rabies prevention in order to fill the gaps in knowledge regarding prevention of rabies and animal bites. Most of the animal bites were associated with dogs and cats. Majority of animal bite victims washed the wound with soap and had sought hospital treatment on the day of the bite. Majority of the victims were dog owners and other animals involved were pet cats and monkeys. Most of the pet owners had not vaccinated their pets and indirectly contributed to the spread of rabies. Pet monitoring regulations should be made more strict to emphasize pet vaccination

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