Original Research Article

KNOWLEDGE, ATTITUDE AND PRACTICE OF DOG BITE PATIENTS AND THEIR ATTENDANTS VISITING JINNAH POST GRADUATE MEDICAL CENTRE – A TERTIARY CARE HOSPITAL IN KARACHI.

Abstract

Dog bite is a global issue and endemic to especially African and Asian countries, where due to lack of awareness dogs (both domestic and wild) are either un-vaccinated or unneutered. The higher authorities seems to be least bothered concerning the increasing number of stray dog in these countries. Although lot of planning is done, no proper execution of these strategies are observed. The other issue is the negligent attitude of people towards wound management. The objective of this study is to assess the knowledge, attitude and practice of dog bite patients and their attendants visiting Jinnah Post-graduate Medical Centre, a tertiary care hospital in Karachi. The structured questionnaires were got filled via interview from both the patient and their attendant at the time they visited the dog bite clinic in the hospital. The results of the study revealed in appropriate and irresponsible attitude on both the part of patients and the concerned authorities responsible for is management. This research work was an endeavor to do the gap analysis in order to ensure practical implementation to overcome the endemic of dog bite and rabies.

Key words: viral, wound, prophylaxis, immunization

Introduction

Rabies is globally, an endemic disease. It is more prevalent in Asian states. Rabies virus is spread through the body fluids of the infected dog. Infected animals can spread the virus by biting another animal or a person. In occasional cases, rabies can be spread when infected saliva gets into an open wound or the mucous membranes, such as the mouth or eyes. Rabies virus is double stranded RNA. Rabies is a neglected with high incidence rate in Pakistan with poor surveillance system. (WHO Organization, 2013; Digafe, Kifelew, & Mechesso, 2015; Tschopp, Bekele, & Aseffa, 2016).

To reduce the risk of having contact with rabid animals, following steps may be taken: vaccinate the pet, keep the pets confined, protect small pets from predators, report stray animal to local authorities, don't approach wild animals, consider the rabies vaccine if travelling in country where rabies is common, if bite is caused by a dog with an unknown rabies vaccine history, or by a dog that's acting erratically or appears to be sick, when bleeding doesn't stop, bite causes intense pain, exposes bone, tendons, or muscle; causes loss of function, such as an inability to bend fingers; looks red, swollen, inflamed or leaks pus or fluid.

In case of dog bite, the primary step is the wound management. Wash the wound with soap and warm water. Gently press a clean cloth over the wound to stop the flow of blood. Apply an anti-

bacterial ointment/ topical antibiotic (povidone iodine) to the wound and cover with a sterile bandage.

Dog bites may cause several complications including bacterial infections (causative micro-organisms present in dog's saliva - staphylococcus, pasteurella, capnocytophaga), tetanus, rabies and nerve or muscle damage.

The diagnosis of animal and human rabies can be made by following ways: clinical examination, histopathology, virus cultivation, serology and virus antigen detection. Although each of the first 4 methods have distinct advantages, none provide a rapid definitive diagnosis. The Fluorescent antibody test is now the most widely used method for diagnosing rabies infection in animals and humans.

The general treatment protocol for rabies virus includes following rabies shots: Rabies immune globulin to prevent the virus from causing infection. Part of this injection is given near the area where the animal has bitten if possible, at earliest possible after the bite. Secondly, a series of rabies vaccinations to help your body learn to recognize and combat the rabies virus. Rabies vaccinations are given as injections in the arm. The person bitten by the dog receives four injections over 14 days.

Knowledge, attitude and practice studies concerning rabies were conducted to evaluate the gaps to avoid dog bites cases and to timely diagnose and treat rabies (Sambo et al., 2014; Wasay et al., 2012).

Rabies control policy may include objectives for prevention of rabies in humans with current PEP as well as prevention and control of canine rabies via parenteral vaccination of dogs to interfere the chain of transmission especially in regions with high dog bite injury burden and greater population density (Garg et al. 2017).

Ethical Considerations
The study was approved by the Institutional Review board of Basic Medical Studies Institute, Jinnah Post graduate Medical Centre - Karachi.

Study Duration
October 2020 to December 2020.

Study Design
The study design was a cross-sectional survey.

Method
The survey included population of all age groups, both genders, residents of both rural and urban areas having varied levels of education.

Data analysis

Data was collected by a trained survey enumerators to reduce the likelihood of missing critical data points. The participant's knowledge, attitude, and practices regarding rabies disease were assessed via the structured questionnaire. SPSS 20.0 software was used for initial descriptive analysis and univariate analysis in order to estimate respondent's knowledge, attitude, and practices related with rabies.

Results

The dog bite patients responses revealed lower level of education, unawareness of the behavior to adopt to remain safe from dog bite and insufficient information about wound washing and significance of immediate medical consultation (see graph 1a – 16a).

The results of the patients' attendants profile, knowledge, attitude and practice was also recorded (graph 1b – 23b).

Conclusion

It is observed that Karachitties need well planned aware sessions to protect themselves from dog bite ad rabies disease. Along with it practical implementation on the policy of eradication of rabies by 2030 needs to be done in context of vaccination of dogs as well as their sterilization to gain control over the ever-growing stray dogs population.

Discussion

Our reseach study was in confirmation with Yalemebrat et al. 2016 that community lack of awareness (Yalemebrat, Bekele, & Melaka, 2016)

We found that most of those respondents did not vaccinate their pets against rabies. This finding was consistent with findings of prior KAP surveys in India, Ethiopia, and Grenada (Glasgow et al. 2019; Tiwari et al. 2019; Digafe et al. 2015).

One of the critical findings of this survey is that the majority of the respondents revealed that they did not seek urgent medical care following a dog bite, consistent with similar studies on rabies in Pakistan (Khan et al. 2019).

We also observed that many of our respondents were not aware of rabies disease and its deadly nature despite many of them being aware of the clinical signs associated with rabies is a finding similar to previous studies in the Philippines, Bangladesh, and Tanzania (Sambo et al. 2014; Davlin et al. 2014; Hossain, 2017).

The awareness may lead to change in attitude of the people who have close contact with their unvaccinated dogs. The attitude toward dog bite and subsequent wound management can be improved if the population are aware of the risks associated with it. Wound cleaning after a dog bite is a crucial step to prevent rabies disease. Many of the respondents in the survey were not aware of the significance of proper wound management of dog bite immediately after it takes place. Improper wound management instantly after a dog bite and seeking no medical attention inevitably results in death if the animal is rabid, which could be prevented through this essential step in Pakistan (Touseef et al. 2020). Significantly less number of people in Pakistan immediately seek hospital care after dog bite in comparison to Bhutan, Tanzania, Sri Lanka, and

Ethiopia (Matibag et al. 2007; Digafe et al. 2015; Sambo et al. 2014; Penjor et al. 2019). This may be the causative factor in the number of deaths associated with rabies in Pakistan.

It is perceived that some people look for home remedies to cure rabies instead of visiting hospitals. The practice of pursuing home remedies for possible rabies patient is also reported in Africa and India (Dabuma et al. 2017; Singh & Choudhary, 2005).

Rabies is increasingly claiming deaths which generate public outcry, mostly due to painful death but also due to unavailability of rabies vaccine. Pakistan has poor health care infrastructure, as it is seen that there are only two rabies management centers in metropolitan city of Karachi in Sindh Province, moreover, these centers also serve people from the interior of Sindh and Baluchistan province, a vast area of southern Pakistan. These centers record over 20,000 dog bites cases annually (Wasay et al. 2012).

According to World Health Organization, 45% of the human rabies global burden is contributed by the SAARC region (South Asian Association for Regional Cooperation) includes eight countries; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka (WHO, 2019).

According to the research work carried by Sultan and Khan (2013) Pakistan has one of the world's highest tolls of human rabies, having an estimated cases ranged from 2000–5000 human cases/year (Sultan and Khan, 2013).

The rabies endemic countries in South Asia are classified into three groups according to their respective disease burden. It is either high (Pakistan, India and Bangladesh), medium (Bhutan, Nepal and Sri Lanka) or low (Afghanistan) (Chowdhury et al., 2015).

In Pakistan, just in the city of Karachi, the estimated population having rabies is 9 per million (Nanayakkara et al., 2013).

Each day on average 25 to 30 new cases of dog-bites are admitted in the hospitals in Sindh, Punjab, Khyber Pakhtunkhwa and Baluchistan. They are included in high risk areas for rabies as categorized by National rabies control program of Pakistan (Yousaf et al., 2012).

A study of rabies awareness in eight Asian countries (Indonesia, China, India, Philippines, Pakistan, Thailand, Sri Lanka, and Bangladesh) indicated that respondents obtained most of their information pertaining to rabies and its prevention from their relatives or neighbors (Sor et al., 2018).

The study conducted by Khan et al. (2019) revealed that participants in the study exhibited limited knowledge of rabies and unreliable attitude and practices with respect to the prevention and control of disease. It was witnessed that those people who were aware of rabies had good knowledge and attitude, but poor practices towards coping with it.

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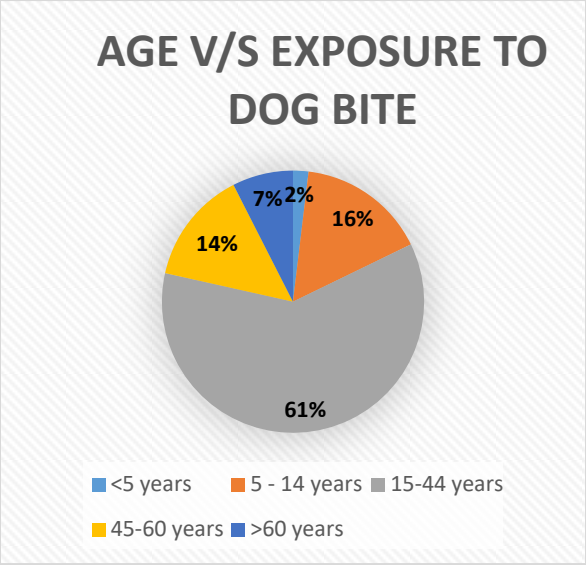
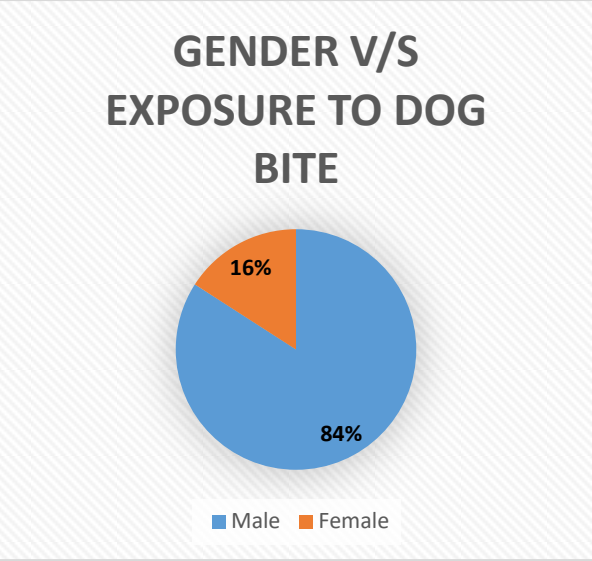
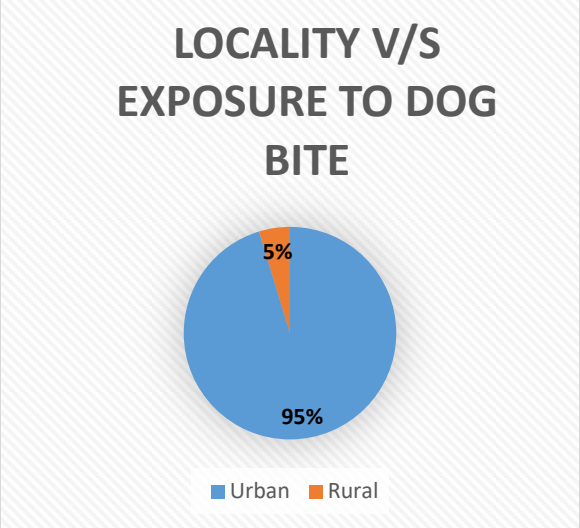
QUESTIONNAIRE RESULTS FOR PATIENTS EXPOSED TO DOG BITE



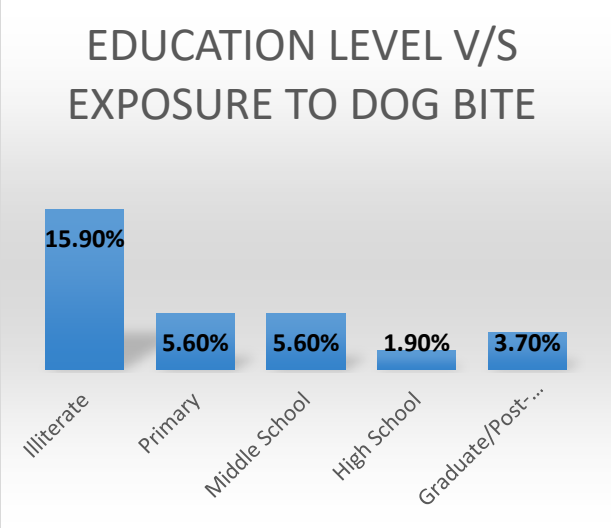
Graph 1a: Age of dog bite patients



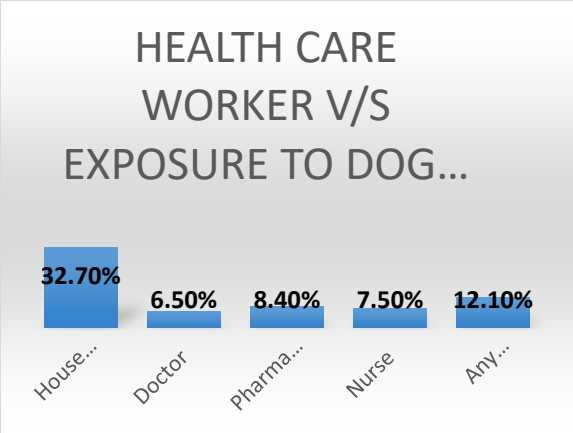
Graph 2a: Gender of dog bite patients



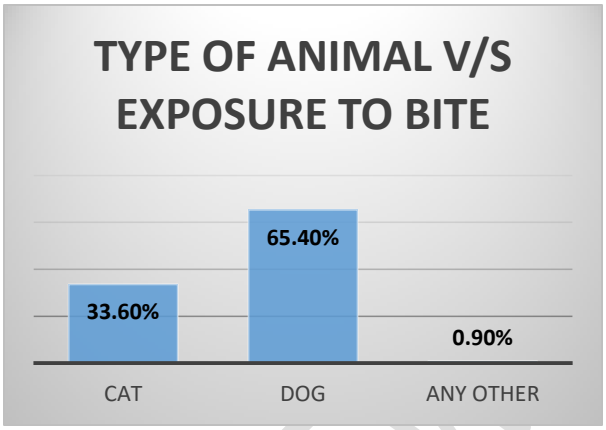
Graph 3a: Locality of dog bite patient



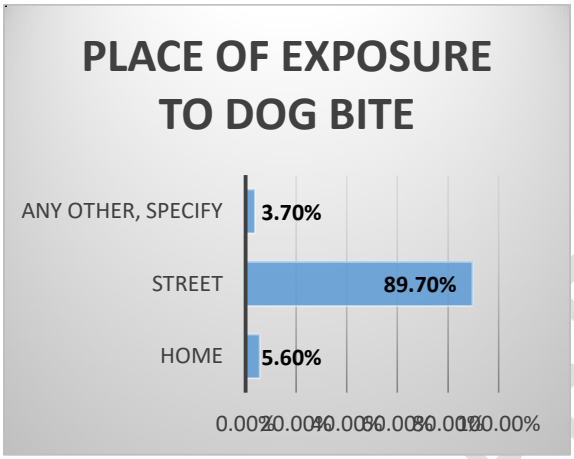
Graph 4a: Education level of dog bite patients



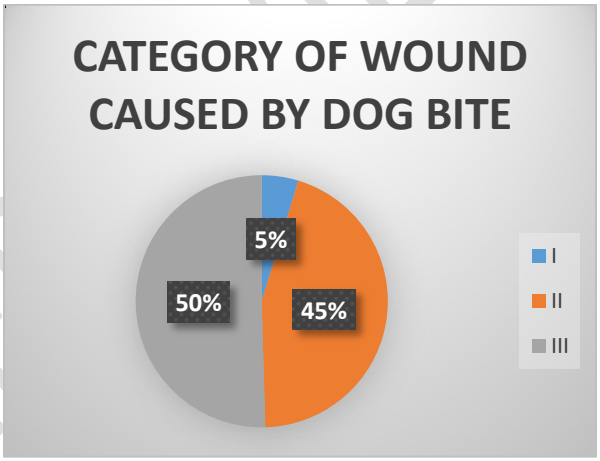
Graph 5a: Whether dog bite patients were health care workers



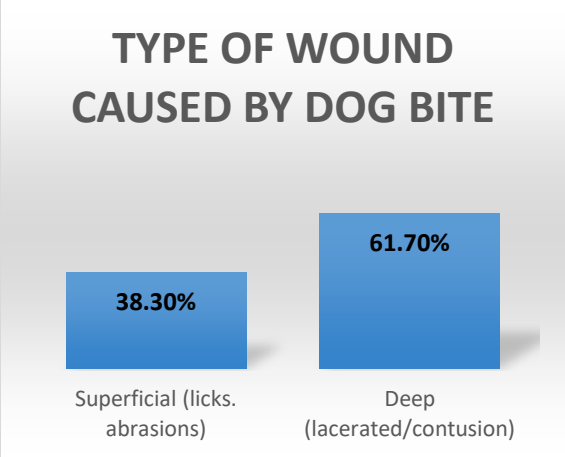
Graph 6a: Types of animals that bite patients



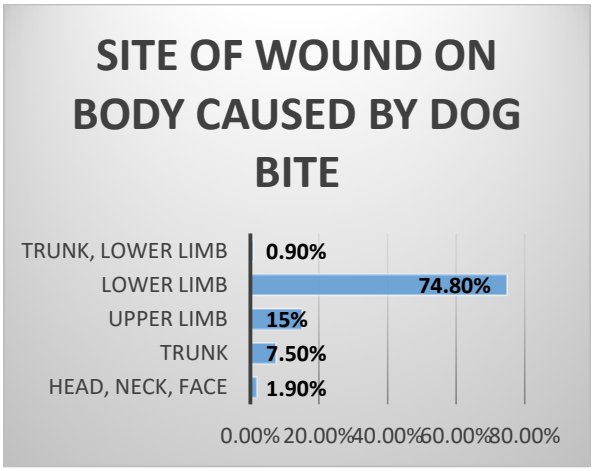
Graph 7a: Place of exposure to dog bite



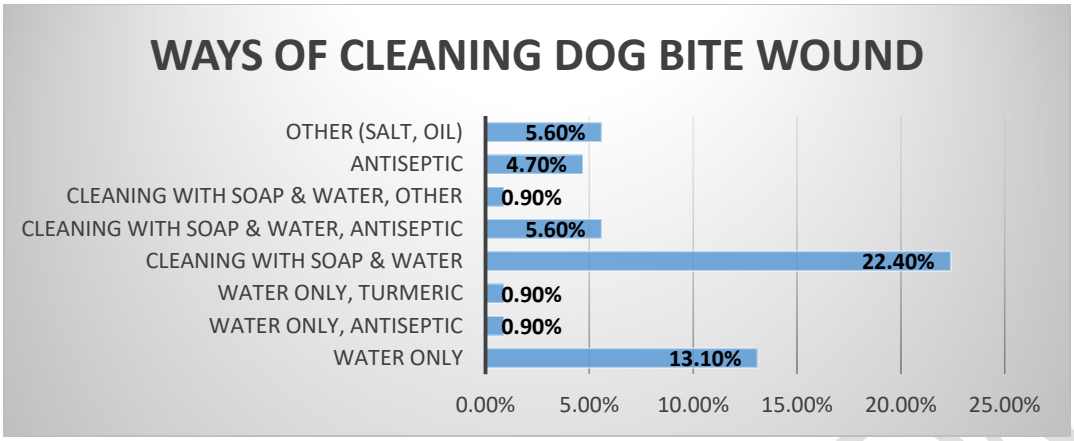
Graph 8a: Category of wound cause by dog bite



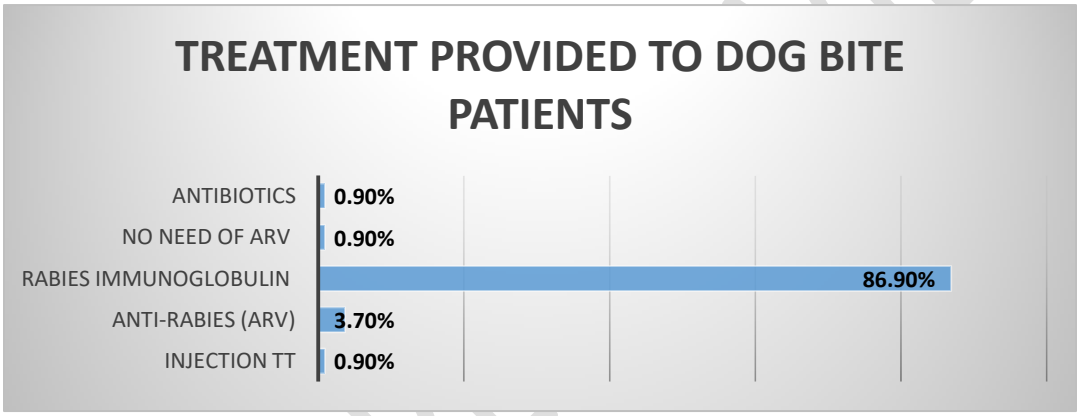
Graph 9a: Type of wound cause by dog bite



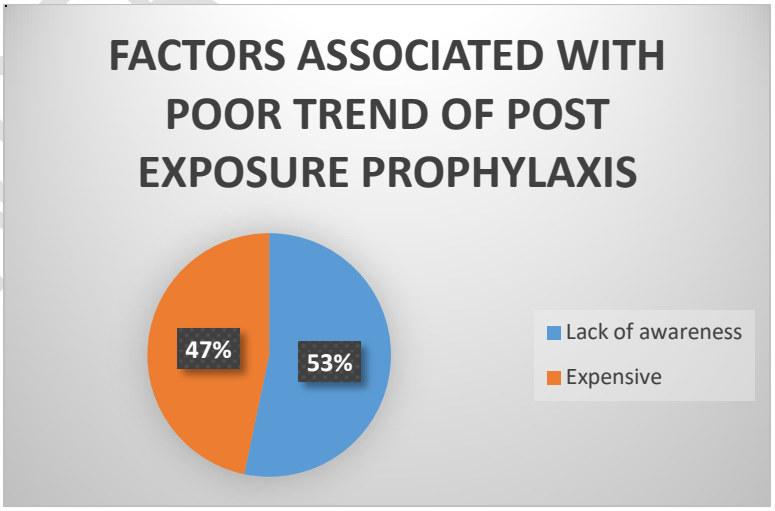
Graph 10a: Site of wound on body cause by dog bite



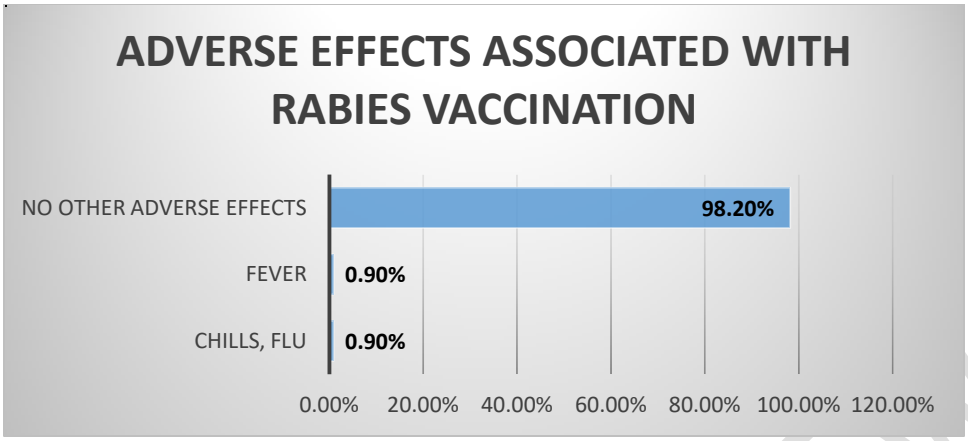
Graph 11a: Ways of cleaning dog bite wound



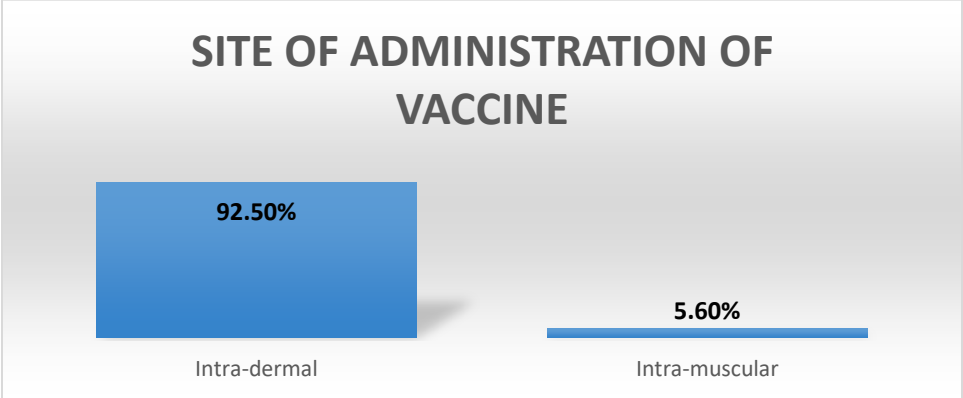
Graph 12a: Treatment provided to dog bite patients



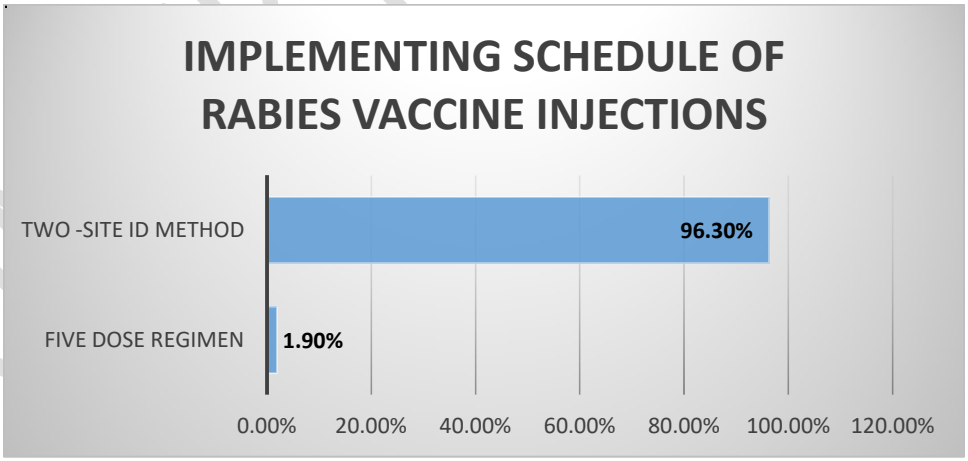
Graph 13a: Factors associated with poor trend of post exposure prophylaxis



Graph 14a: Adverse effects associated with rabies vaccination

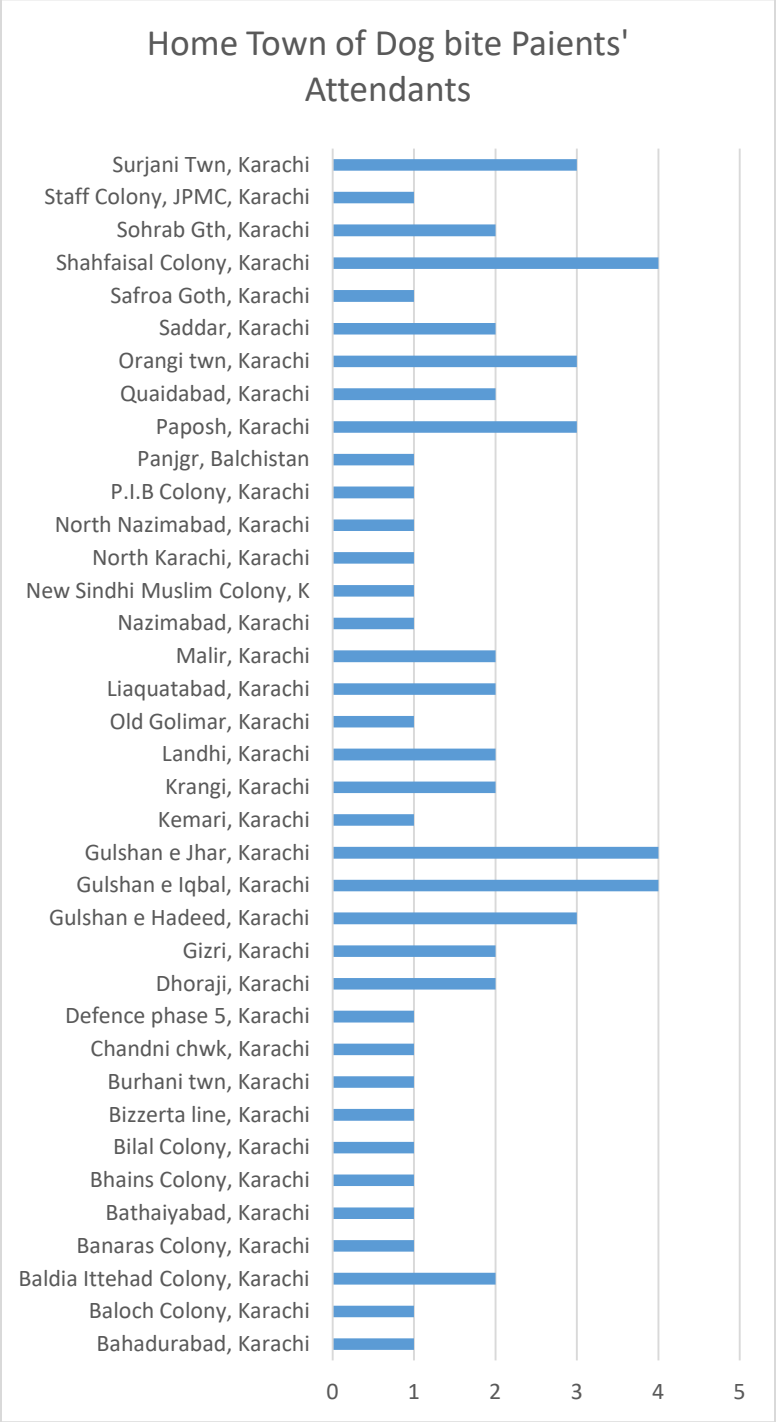


Graph 15a: Site of administration of vaccine

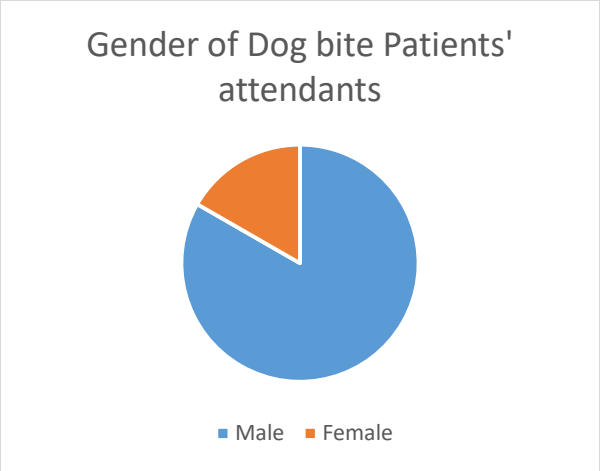


Graph 16a: Schedule for implementation of rabies vaccine

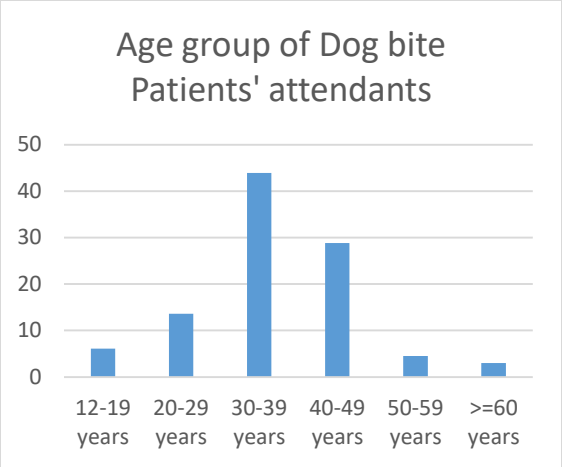
KAP (KNOWLEDGE, ATTITUDE & PRACTICE) QUESTIONNAIRE REGARDING RABIES



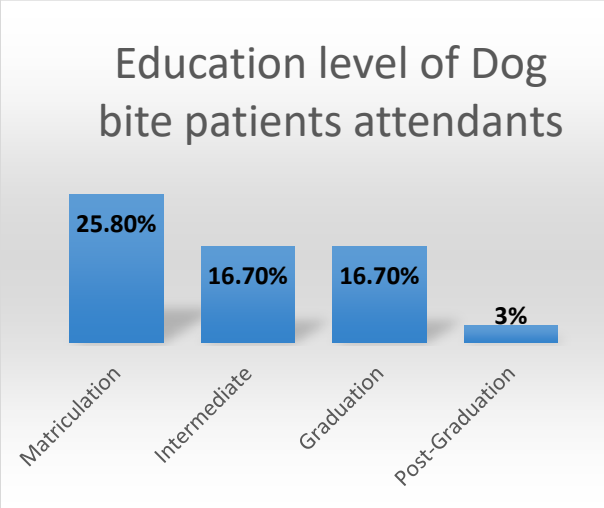
Graph 1b: Home location of Patients attendants



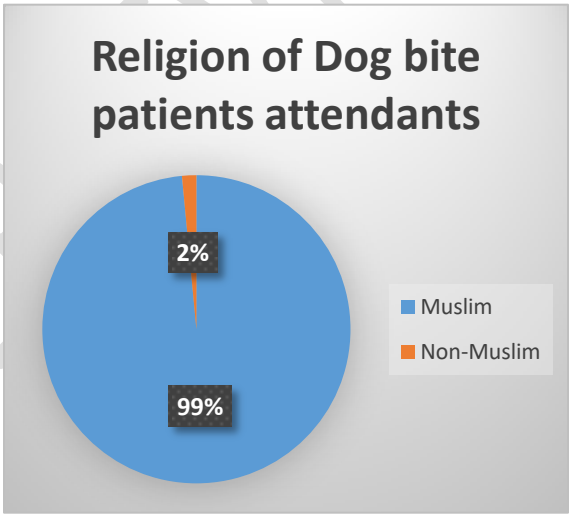
Graph 2b: Gender of Patients attendants



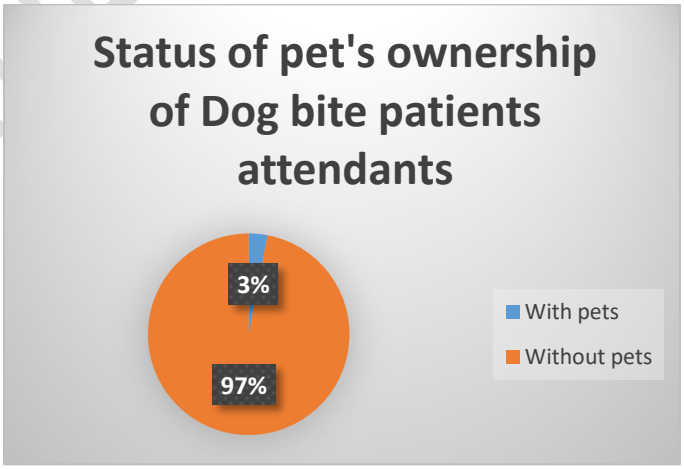
Graph 3b: Age-group of Patients attendants



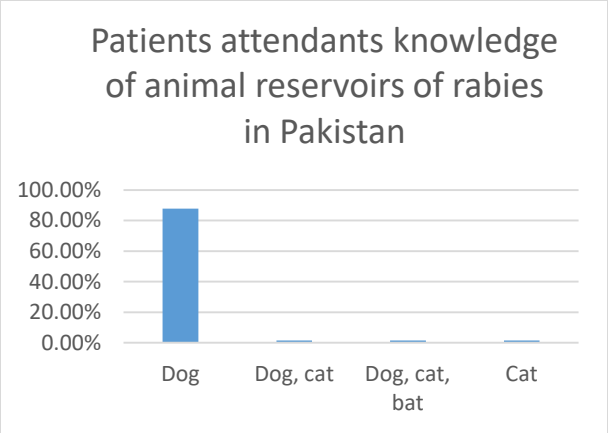
Graph 4b: Education level of Patients attendants



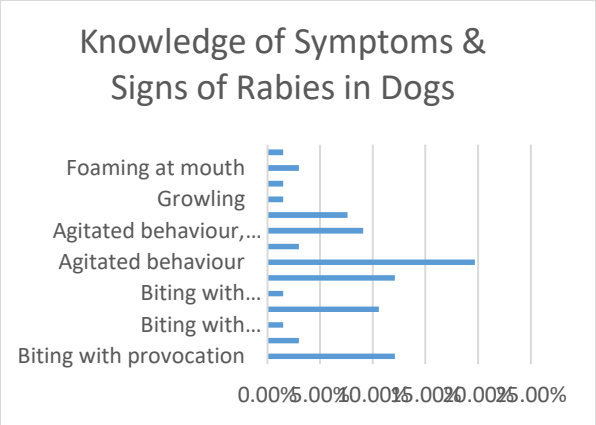
Graph 5b: Religion of Patients attendants



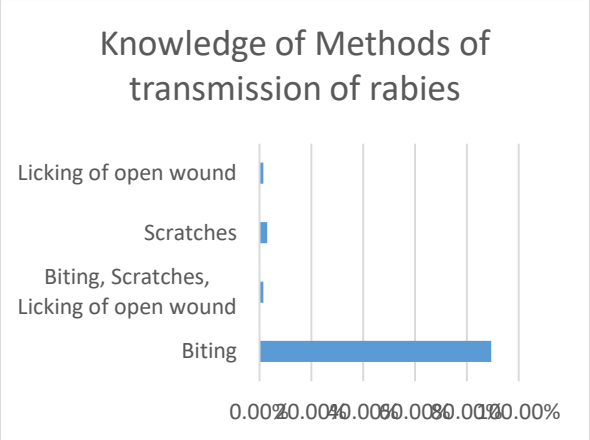
Graph 6b: Status of pet's ownership of Patients attendants



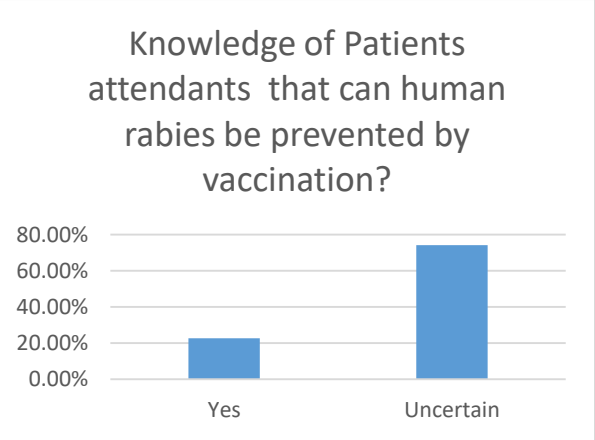
Graph 7b: Animal reservoirs of rabies in Pakistan



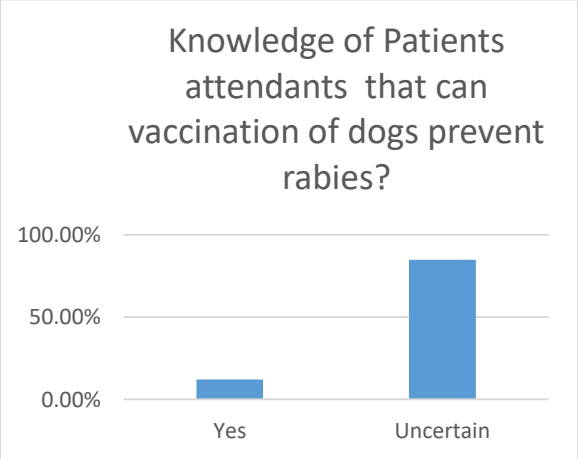
Graph 8b: Symptoms and signs of rabies in dogs



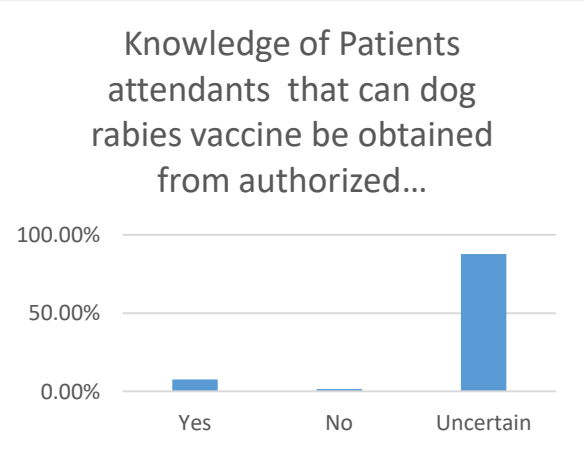
Graph 9b: Methods of transmission of rabies



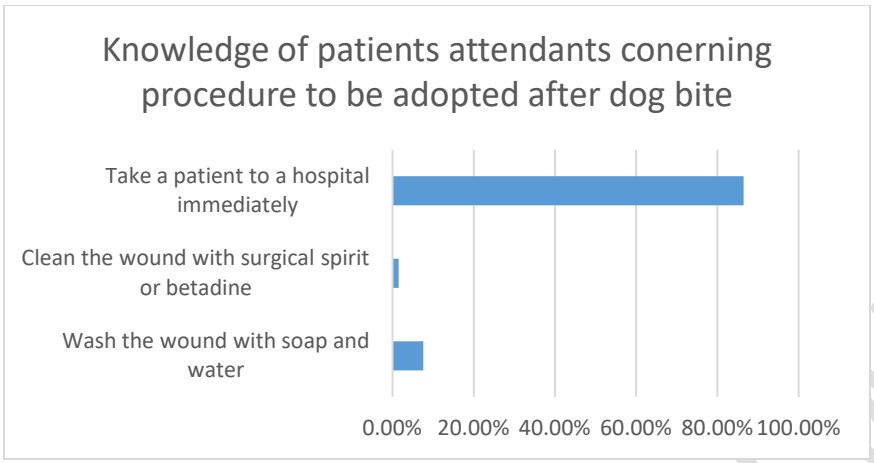
Graph 10b: Can human rabies be prevented vaccination?



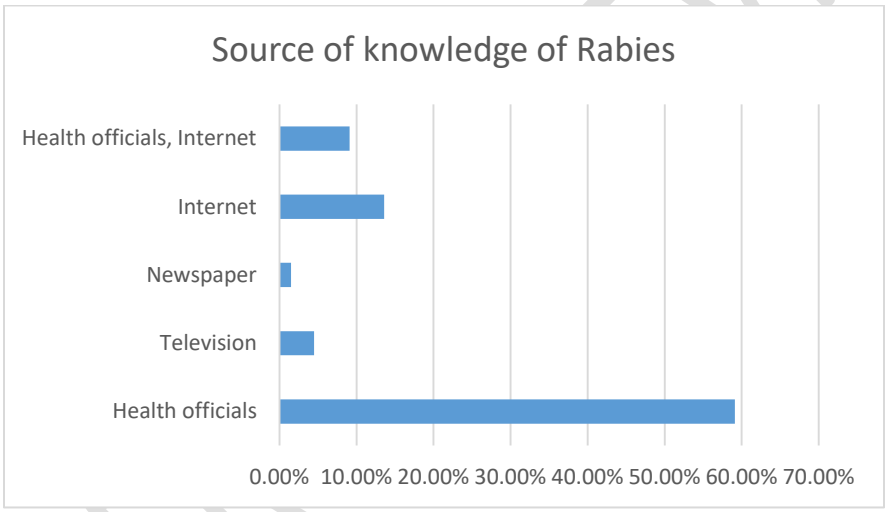
Graph 11b: Can vaccination of dogs prevent rabies



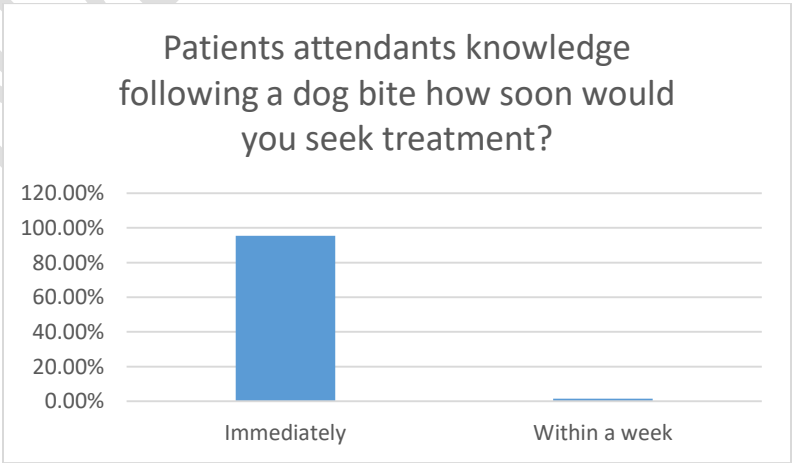
Graph 12b: Can dog rabies vaccine be obtained from authorized government veterinary offices?



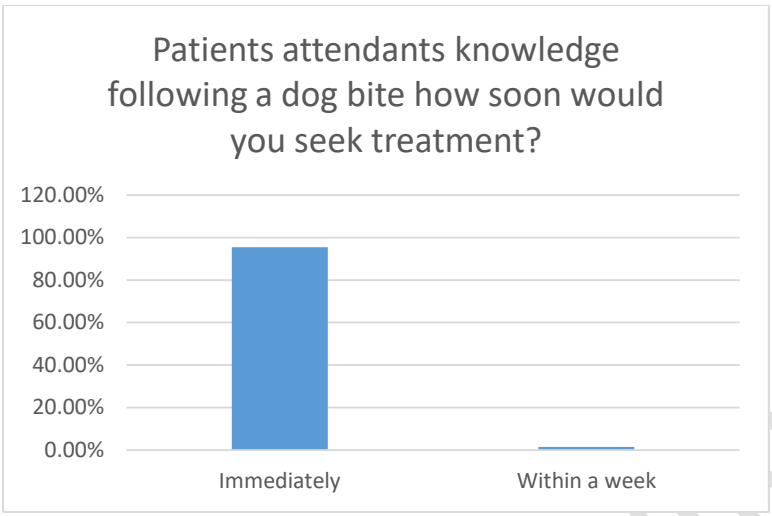
Graph 13b: The following procedure should be adopted after a dog bite.



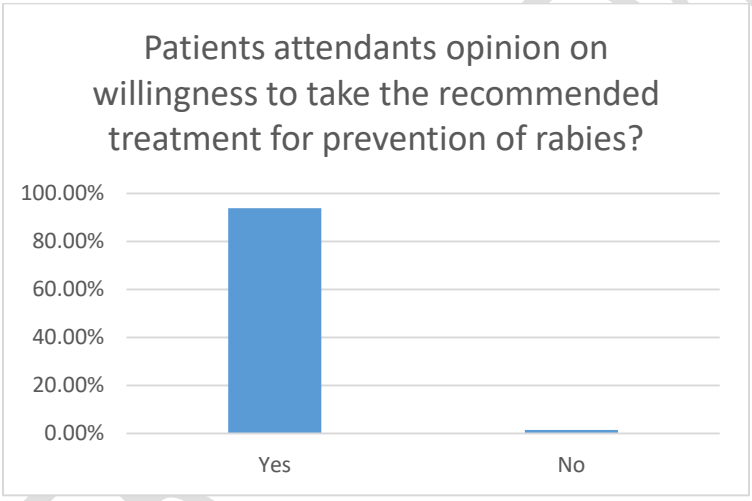
Graph 14b: Sources of information



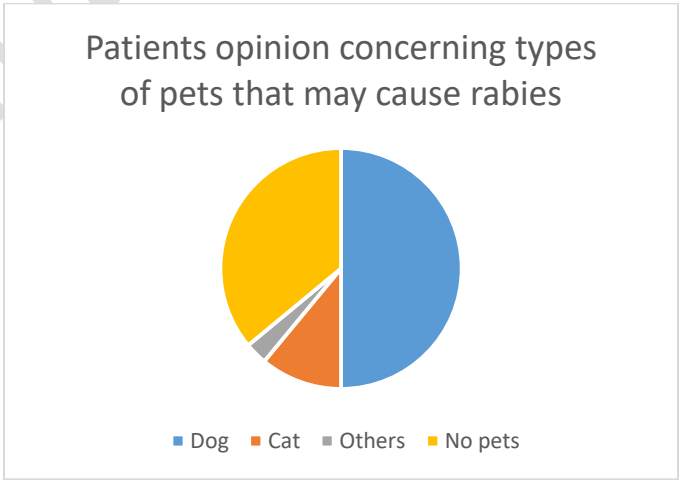
Graph 15b: Following a dog bite how soon would you seek medical advice?



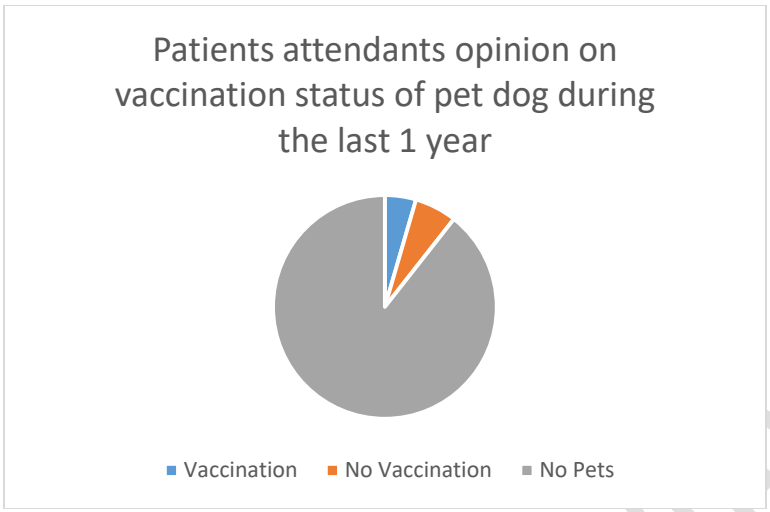
Graph 16b: Following a dog bite from whom would you seek treatment



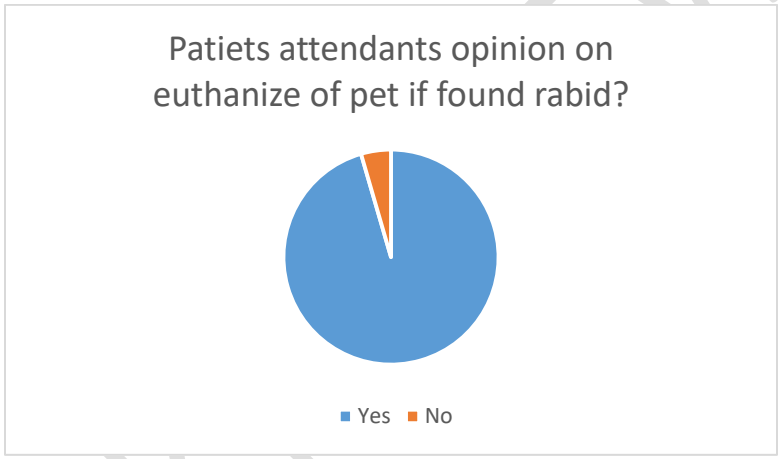
Graph 17b: Are you willing to take the recommended treatment for prevention of rabies?



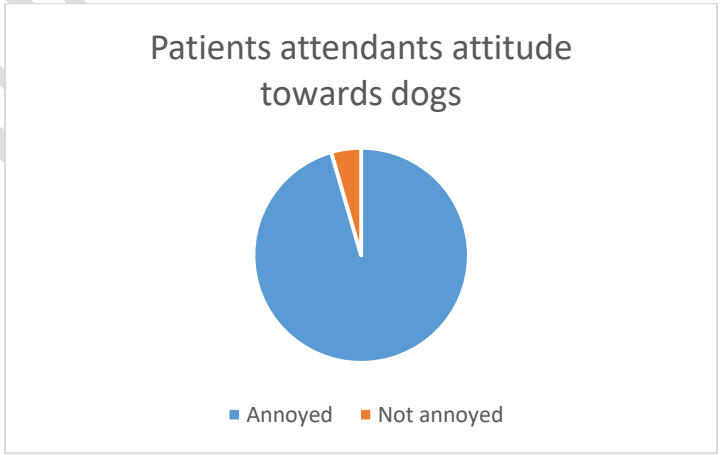
Graph 18b: Type of pet



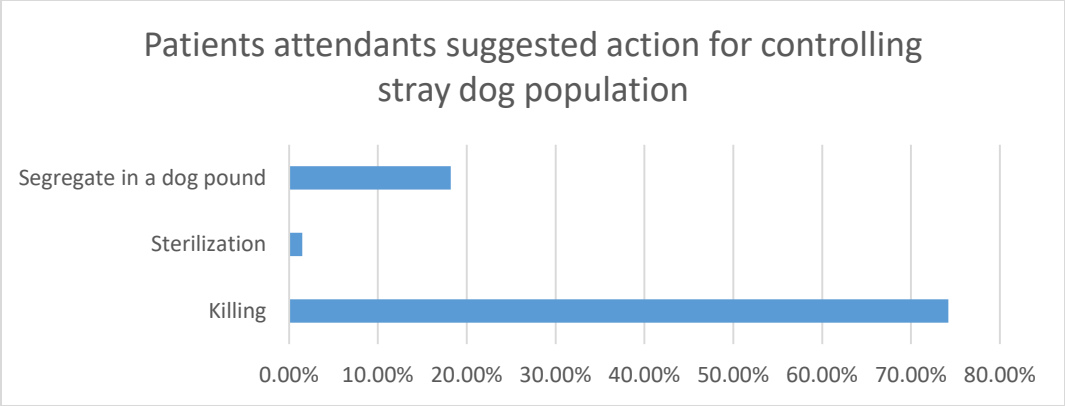
Graph 19b: Vaccination status of pet dog during the last 1 year



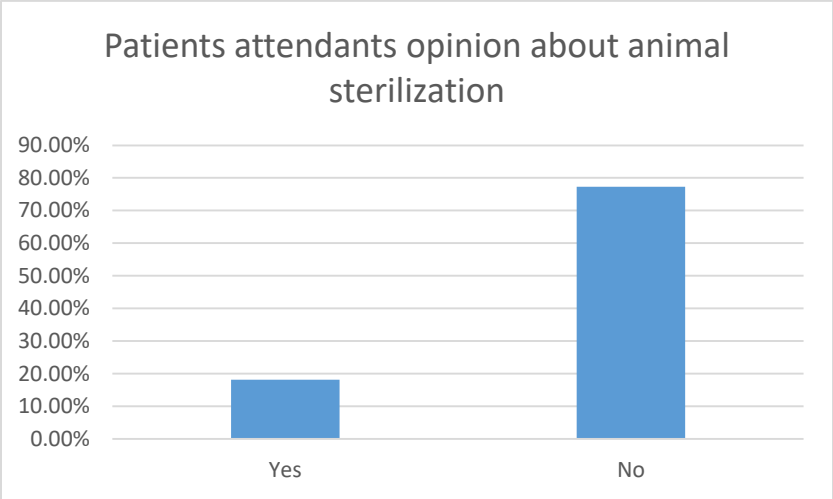
Graph 20b: Would you euthanize your pet if found rabid



Graph 21b: Annoyed with stray dogs



Graph 22b: Actions suggested for controlling stray dog population



Graph 23b: In favour of animal sterilization