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ENVIRONMENTAL EDUCATION AS AN ACTION TO PREVENT SPOROTRICHOSIS

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ABSTRACT

This article, based on a graduation thesis in environmental management, seeks to publicize the importance of responsible ownership of animals, such as cats, in the prevention of sporotrichosis disease, highlighting the interdependence between human, animal and environmental health. A literature review was carried out, showing the real importance of environmental education in the prevention of sporotrichosis and presenting some concepts of single health, responsible ownership and the need to change human behavior to mitigate environmental and health impacts. In addition, biosafety practices in the management of sporotrichosis were mentioned, seeking behavioral modification and the adoption of preventive measures against the disease. The results pointed to the elaboration of an educational material aimed at the proper management of healthy cats and an informative material about sporotrichosis; followed by the conclusions of the research.

Keywords: Sporotrichosis. Environmental education. Domestic cats. Public Health.

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INTRODUCTION

Sporotrichosis is a disease conceptualized as an infectious disease that is naturally transmissible from non-human animals to human animals and can be caused by viruses, bacteria, protozoa, fungi or parasites. And the motivation for the elaboration of this study is to answer the following question: how can sporotrichosis be presented within the field of environmental education? Whose research will seek to answer, scientifically, this problem question.

This article aims to present a review of the literature related to the responsible ownership of domestic animals and their biological and parasitological characteristics, related to sporotrichosis, aimed at the elaboration of didactic material with an environmental education nature.

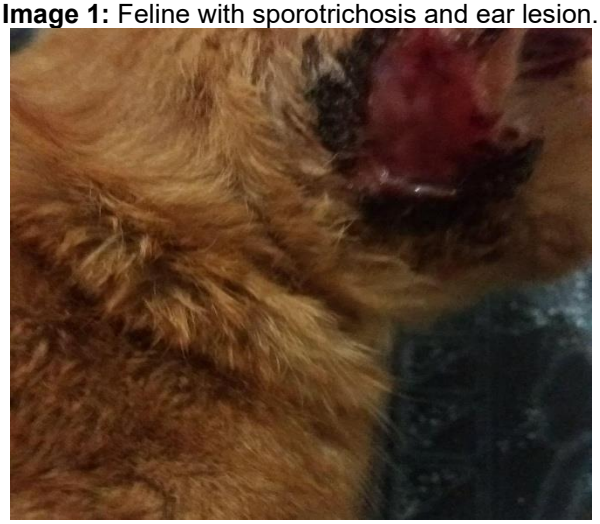
According to Beserra (2010), environmental education is focused on health, promoting the integration and sensitization of people to strengthen the community, educating it about health, citizenship and democracy, as an important tool in the prevention of zoonoses and in the resolution of socio-environmental problems, encouraging awareness and engagement in sustainability activities (Antunes, 2024).

Sporotrichosis, mycosis caused by the fungus Sporothrix, is a zoonosis with a high incidence in domestic felines, with contact with these animals being the main form of transmission to humans. Transmission occurs through bites, scratches, and direct contact with lesions, the latter being the most virulent and important mechanism for the spread of the disease (Pires, 2017; Alzuguir, 2019; Lima, 2020). The fungus Sporothrix schenckii, present in materials such as soil and plants, was first described in Rio de Janeiro and, although initially considered a South American disease, has a wide geographic distribution (Larsson, 2011).

In Rio de Janeiro, sporotrichosis stands out as an urban disease related to areas with precarious infrastructure and inadequate sanitation, characterized by zoonotic transmission in the home environment, with the cat as the main transmitter. The disease is the third most notifiable disease in Brazil (Larsson, 2011; Ministry of Health, 2023). Environmental factors such as poor paving, the presence of a garden/backyard, exposed soil and the presence of felines favor the transmission of the disease, considered neglected by the World Health Organization (WHO) because it prevails in conditions of poverty and contributes to social inequality (Larsson, 2011; Silva, 2012).

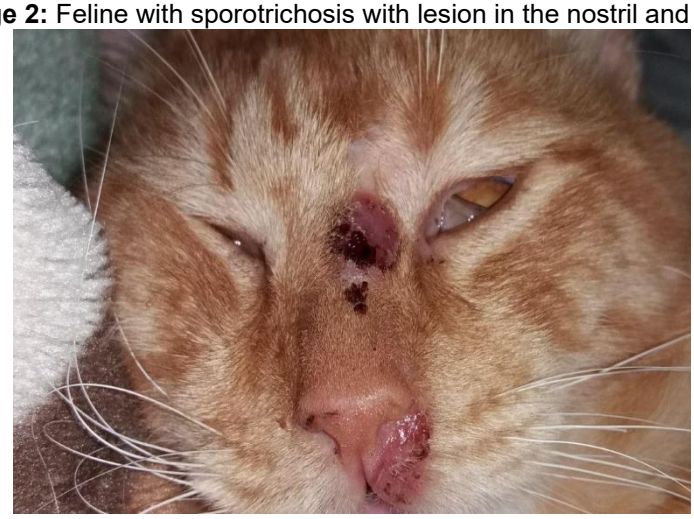
The most common clinical manifestations of sporotrichosis - cutaneous lymph lesions - are represented in those represented in Images 1 and 2.

Image 1: Feline with sporotrichosis and ear lesion.



Source: Adapted from Antunes (2024)

Image 2: Feline with sporotrichosis with lesion in the nostril and nose.



Source: Adapted from Antunes (2024)

METHODOLOGY

This article is based on the course completion work presented at the Faculty of Technological Education of the State of Rio de Janeiro - FAETERJ/PARACAMBI, according to Antunes (2024), its methodology was based on a literature review, as follows.

METHODOLOGY

The bibliographic review of Antunes' Course Completion Paper (2024), which at the time was carried out with a search for articles on Google Scholar as a basis, and also the production of informative material on sporotrichosis and environmental prevention measures were used. The article began to be prepared during the year 2024, after the author's defense, and revised in the year 2025 for publication, with the help of the other authors of this article 2,3,4,5, the keywords used were the same used by Antunes (2024): Sporotrichosis; "public health + environmental education"; "Domestic cats + sporotrichosis".

The informative material created by Antunes (2024) was prepared with the help of the Canva tool, using data taken from the bibliographic sources mentioned in Antunes (2024) in the topic of materials and methods of his TCC, covering the period from 2006 to 2023. The images in this article were adapted from Antunes (2024)

In the Canva application, Antunes (2024) used a pre-existing folder model on the platform and adapted with the font "Open sans", "TT Norms", the colors used were "#1050a6", "#fcc613", "#fffffff", and the methodological basis is the same as the research for the preparation of the TCC and this article.

RESULTS

As observed in Antunes (2024), the results pointed to the creation of educational materials, such as folders and banners, crucial to raise awareness about the proper management of domestic animals, especially cats, and the prevention of zoonoses. Many people consider caring for cats, even healthy ones, difficult and costly, making it difficult to adopt preventive practices. Clear and accessible information is essential to encourage proper management and animal welfare.

The management of healthy cats requires access to information of good origin and quality. And for this reason, the author prepared simple and easy-to-implement informative materials, with the objective of avoiding difficulties or demotivation on the part of tutors in the application of the guidelines. Simplicity is essential to deconstruct limiting ideas about the proper care of domestic animals, which are often seen as laborious, costly, and inaccessible. This misperception contributes to animal health and welfare being mistakenly associated with luxury items (Antunes, 2024).

Based on this demand, the didactic material entitled "Proper Management for Healthy Cats" was developed. This work included the creation of an informative folder on sporotrichosis, based on a literature review and produced using the Canva tool. The main objective was to address the most relevant issues about the disease, promoting greater knowledge among the population and encouraging a state of surveillance in the municipalities that receive the material. It is hoped that this initiative will contribute to the reduction of cases of sporotrichosis (Antunes, 2024).

The preparation of the folder used a pre-existing model on the Canva platform, adapted with the "Open Sans" and "TT Norms" fonts, in addition to the colors "#1050a6", "#fcc613" and "#ffffff". The methodological basis followed the same criteria as the research carried out for the elaboration of the author's TCC and this work. At the same time, a banner was produced using information collected during the literature review. The banner

template was made available by the FAETERJ-Paracambi institution, being used for presentations at the Science and Technology Week (Antunes, 2024).

This approach seeks not only to provide clear and accessible information to pet owners, but also to foster a culture of prevention and responsible care for domestic animals. The dissemination of didactic materials such as this reinforces the importance of education in combating sporotrichosis and promoting animal welfare (Antunes, 2024).

DISCUSSION

The management of healthy cats, as well as the care of those with specific diseases, such as sporotrichosis, requires prior knowledge about the species and possible comorbidities, and the preparation of informative materials aimed at the lay public helps them to have access to true information, free of popular beliefs or outdated management techniques. Sporotrichosis is a fungal infection of great importance in public health due to its zoonotic potential, that is, the ability to be transmitted from animals to humans (Antunes, 2024). The author's experience demonstrates that the diagnosis and treatment of sporotrichosis present significant challenges, including a lack of initial recognition of symptoms, limited access to reliable information, and the long duration of treatment.

During the care of two cats diagnosed with sporotrichosis, the complexities and barriers surrounding the diagnostic and therapeutic process were observed. Initially, the diagnosis was difficult, since the symptoms of sporotrichosis can resemble other skin diseases. This similarity prolonged the diagnostic process and brought difficulties both to the author, as a tutor, and to the professionals involved in the care of the cats (Antunes, 2024). After the disease was confirmed, the treatment proved to be demanding and challenging. It demanded not only a strict drug regimen, but also specific biosafety precautions to avoid transmission to other people and animals in the domestic environment.

Biosafety is defined as a set of measures aimed at preventing, controlling, reducing, or eliminating risks inherent to activities that may compromise the health of humans, animals, plants, and the environment. Infectious-contagious diseases and contact with contaminated biological material are the main routes of contamination for patients and professionals (SILVA et al., 2012; SCHEIDT et al., 2006). Professionals who assist sick animals, such as veterinarians and veterinary assistants, should use Personal Protective Equipment (PPE) during the clinical care of cats with confirmed or suspected sporotrichosis (SILVA et al., 2012; GOVERNMENT OF THE STATE OF ESPÍRITO SANTO). Recommended PPE includes:

- Disposable long-sleeved apron with elastic bands at the cuffs (mandatory);

- Disposable procedure gloves (mandatory);
- N95 or PFF2 face mask (optional);
- Goggles (optional);
- Disposable cap (optional).

Good practices are techniques and procedures that aim to minimize and control the exposure of workers to the risks arising from the profession. Some best practices for the management of sporotrichosis in a clinical setting include (SILVA et al., 2012):

- Wear closed shoes;
- Keep your hair tied up or covered by a disposable cap and your nails short;
- Always use PPE;
- Not performing clinical care alone;
- Do not eat, drink or smoke in the service areas;
- Avoid bringing your hands to your face during consultations;
- Sanitize your hands before starting work, after wearing gloves and when leaving the service room;
- Do not wear a lab coat outside the work environment;
- Do not use adornments that prevent good hand hygiene;
- Decontaminate the table after each service;
- Do not resurface needles;
- Dispose of sharps in an appropriate place;
- Dispose of contaminated material in a milky garbage bag with a biological risk symbol;
- Proceed with the incineration of the carcasses of animals that die;
- In case of an accident, wash the skin with soap and water and seek medical attention;
- Use 1% sodium hypochlorite to clean the environment.

The proper use of PPE aims to protect professionals from the risks associated with their activity. Masks, caps, goggles, boots and gloves should be used whenever there is a possibility of contact with biological material. The combined use of these PPEs is optimized through universal precautions (SCHEIDT et al., 2006).

The main difficulties in implementing biosecurity in disease management include factors such as age, culture, responsibility, and education. Education is considered the best way to promote behavioral changes in society, even if the results take time to emerge (MASTROENI, 2008). Environmental education can be used to disseminate good practices in the management of sporotrichosis among health workers, constituting an additional tool

in the control and prevention of the disease (GOVERNO DO ESTADO DO ESPÍRITO SANTO).

In short, the proper management of sporotrichosis in cats requires an integrated approach that considers both clinical practices and the biosecurity measures necessary to protect everyone involved (Antunes, 2024).

CONCLUSION

Sporotrichosis is a disease caused by a fungus present in the environment that mainly affects cats, which can transmit the disease to humans. Lack of information and improper handling of pets are factors that contribute to the spread of sporotrichosis.

It was the context on which the research in this article was based, showing that environmental education plays a fundamental role in the construction of social values, skills and attitudes aimed at the prevention of sporotrichosis. It is necessary to make tutors aware of the importance of knowing the behavior and needs of their animals, as well as the risks of exposure to the fungus.

Therefore, raising cats indoors, castration, regular visits to the veterinarian and the adoption of hygiene and biosecurity measures are important measures to prevent sporotrichosis. Environmental education can be a powerful tool to promote these practices and reduce the incidence of the disease in humans and animals.

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