

One Health in Companion Animals

Subjects: Zoology

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Background: Over time the human–animal bond has been changed. For instance, the role of pets has changed from work animals (protecting houses, catching mice) to animals with a social function, giving companionship. Pets can be important for the physical and mental health of their owners but may also transmit zoonotic infections. The One Health initiative is a worldwide strategy for expanding collaborations in all aspects of health care for humans, animals, and the environment. However, in One Health communications the role of particularly dogs and cats is often underestimated. *Objective:* Evaluation of positive and negative One Health issues of the human–companion animal relationship with a focus on zoonotic aspects of cats and dogs in industrialized countries. *Method:* Literature review. *Results:* Pets undoubtedly have a positive effect on human health, while owners are increasingly aware of pet's health and welfare. The changing attitude of humans with regard to pets and their environment can also lead to negative effects such as changes in feeding practices, extreme breeding, and behavioral problems, and anthroozoonoses. For the human, there may be a higher risk of the transmission of zoonotic infections due to trends such as sleeping with pets, allowing pets to lick the face or wounds, bite accidents, keeping exotic animals, the importation of rescue dogs, and soil contact. *Conclusions:* One Health issues need frequently re-evaluated as the close human–animal relationship with pet animals can totally differ compared to decades ago. Because of the changed human–companion animal bond, recommendations regarding responsible pet-ownership, including normal hygienic practices, responsible breeding, feeding, housing, and mental and physical challenges conforming the biology of the animal are required. Education can be performed by vets and physicians as part of the One Health concept.

Keywords: One Health ; companion animals ; pets ; human–animal bond ; anthropomorphism ; zoonoses ; hygiene hypothesis

1. Introduction

The One Health initiative or concept is a worldwide strategy that recognizes that public health is connected with animal health and the environment. It concerns multidisciplinary collaboration between physicians, veterinarians, environmental scientists, public health professionals, wildlife experts, and many others. With a multisectoral and transdisciplinary approach, public health threats can be better monitored and controlled. The resulting synergism enhances the knowledge of how diseases, known as zoonotic diseases, can be shared between animals and people with the goal of achieving optimal health outcomes. One Health is not a new concept, but it has become more important since 2006 as a result of emerging and re-emerging diseases^[1].

The concept of One Health is nothing new and it started more than a century earlier with the term One Medicine by the 19th century German physician and pathologist, Rudolf Virchow. He introduced the term “zoonosis” and did not distinguish a dividing line between human and animal medicine. Other visionary scientists in this field were the Canadian physician and pathologist Sir William Osler, James Steele who developed the discipline of veterinary public health at the Centers for Disease Control (CDC) in the US, and Calvin Schwabe widely known as the father of veterinary epidemiology who wrote the first handbook in 1964: Veterinary Medicine and Human Health. The One Medicine term has evolved into One Health, placing emphasis on health promotion rather than treating diseases^[2].

2. Three Key Areas

Many One Health initiatives focus mainly on the relationship between humans and livestock or wildlife health, because several zoonotic disease pandemics and (re)emerging infectious diseases originated from these animal species. Examples of such infections are West-Nile virus, corona virus (SARS, Covid-19), Zika virus, avian H5N1 influenza virus, Nipah virus, and Hendra virus. The recently founded One Health European Joint Programme (OHEJP) also focuses on foodborne zoonoses, antimicrobial resistance and emerging threats, while companion animals are absent^[3].

However, the role of companion animals, particularly dogs and cats, is often underestimated in One Health communications. During past decades, dogs and cats more often spend their life indoors in very close physical contact with their owners. There are a number of zoonotic infectious diseases, as well as resistant bacteria, that may be transmitted directly or indirectly from these species. On the other hand, companion animals may be effective sentinels, as they share a common environment with their owners. They can help in the early identification of food contamination, infectious disease transmission, environmental contamination, and even bioterrorism or chemical terrorism events^[4].

The World Small Animal Veterinary Association (WSAVA) One Health Committee considered that there are three key areas of One Health regarding companion animals: (1) The human–companion animal bond, (2) comparative and translational medicine, and (3) zoonotic infectious disease^[5].

The relationship between animal health and public health with regard to companion animals, can be described as sharing the same living environment (both indoors and outdoors), being sensitive to a number of similar pathogens—zoonoses, and often treating with the same medicines if infections occur. In the latter, the development of antibiotic resistance plays a role.

References

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