

LETTER TO THE EDITOR

OTHER

AI chatbots in pet health care: Opportunities and challenges for owners

Dear Editor,

The exponential growth of artificial intelligence (AI) and its application in modern health care has been accompanied by advancements in science and technology (Gama et al., 2022). As an example in medical AI technology, the symbolic disease model is developed using algorithms or programs to analyse the patient's symptoms and signs (Guo et al., 2020). Likewise, AI technology's potential in animal health care has been gaining greater attention in the scientific community in recent years (Basran & Appleby, 2022; Bao & Xie, 2022). AI-powered language models, such as chatbots, can improve public health by leveraging natural language processing techniques to facilitate more efficient data analysis and management (Biswas, 2023; Sallam, 2023). One of these language-generating AI systems is ChatGPT, which has gained significant recognition since its launch on 30 November 2022. Generally, it is considered to be a sophisticated language model that can generate a variety of textual content in various genres and formats. ChatGPT was developed through exposure to a vast range of web-based textual sources, enabling it to emulate multiple writing styles, including conversational exchanges, poetry and journalistic reports, among others (Biswas, 2023; Sallam, 2023). In this letter, we explore the potential benefits and risks associated with using AI chatbots as a tool for animal health care and suggest ways to mitigate the risks and promote the positive aspects of this revolutionary technology.

For pet owners, the health and well-being of their animals are of paramount importance, and accurate and trustworthy information is essential to making informed decisions. The platform provided by AI chatbots allows pet owners to access a wealth of data on animal health. Likewise, AI chatbots provide pet owners with several reasons to choose it over traditional vet consultations. Firstly, it offers access to a vast amount of information related to animal health, including research studies, clinical trials and case studies. As a result of this information, probable treatments and diagnostic options can be identified. In addition, it is available 24/7, without the need for an appointment. Secondly, the AI chatbot platform eliminates the need to pay consultation fees, providing a cost-effective means of accessing animal health information. Thirdly, AI chatbots offer convenience and save owners' time by enabling them to communicate through various devices wherever they are. It also provides instant responses to their queries. Fourthly, AI

chatbots may be able to provide rapid guidance and first aid measures during an emergency situation. Eventually, AI chatbots can also be used as an educational resource for pet owners, giving them access to a wealth of data in the field (Table 1).

According to Twitter, a recent case involving a Border Collie named Sassy illustrates the potential benefits of AI in veterinary medicine. Following a diagnosis of tick-borne disease, Sassy began treatment but did not show any improvement despite multiple attempts by the veterinarian to diagnose the condition. As a result, Cooper, Sassy's owner, sought assistance from ChatGPT. After providing the chatbot with Sassy's blood test results, it recommended immune-mediated haemolytic anaemia as a possible diagnosis. In light of this new information, Cooper notified the veterinarian, who conducted further testing to confirm the diagnosis. Consequently, Sassy began receiving appropriate treatment and eventually became fully recovered. Cooper's story was extensively covered by the media after it was tweeted, encouraging animal owners to use ChatGPT instead of consulting a veterinarian (Brooke Steinberg, 2023).

Although AI chatbots cannot substitute trained professionals' skills and experience, they can be helpful and valuable tools in complex cases, as demonstrated in the Sassy instance. In this regard, AI integration into veterinary practice is an emerging trend that will transform the health care industry in the near future. Nevertheless, the use of AI chatbots in animal health care, such as ChatGPT, has raised concerns about pet owners self-medicating their animals without consulting licensed veterinarians. Moreover, pet owners may not be aware of the potential risks associated with relying exclusively on AI chatbots for medical advice such as the indiscriminate use of antibiotics without proper limitation, contributing to the emergence of antibacterial resistance.

One potential risk is misdiagnosis and inappropriate treatment as AI chatbots have limitations in accurately diagnosing complex medical conditions (King, 2023). As well, they may provide incorrect advice, leading to improper treatments that could harm the animal's health. Pet owners may also delay seeking medical attention by relying on AI chatbots, which might result in more severe medical conditions and increased treatment costs. Moreover, the use of AI chatbots may create a false sense of security among pet owners who rely on them instead of seeking regular check-ups and preventive care from licensed veterinarians. This could lead to missed opportunities for

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TABLE 1 Situations and reasons where pet owners may opt for AI chatbots instead of veterinarians.

Situation	Reasons to turn to AI chatbots
Need for information	<ul style="list-style-type: none"> • Access to a vast amount of information related to animal health • 24/7 availability of information • Personalized information based on the specific needs and concerns of the user • Cost-effective option for accessing information • Convenient and time-saving way to access information • A wide range of topics covered, from nutrition to behavioural issues • Information available for various pet species and breeds • Ability to cross-reference information from multiple sources • Learning opportunities for students
Educational purposes	<ul style="list-style-type: none"> • Learning opportunities for students • Access to experts in the field • Interactive learning experiences to reinforce understanding • Real-time updates on the latest developments • Access to educational content tailored to different learning styles • Virtual simulations for hands-on learning experiences
Emergencies	<ul style="list-style-type: none"> • Quick response time without the need for wait times or appointments • Remote access to guidance on first aid measures and essential steps to take • Reduction in unnecessary emergency visits • Emergency guidance in multiple languages • Ability to transmit real-time health data during emergencies for more accurate advice
Other situations	<ul style="list-style-type: none"> • User-friendly platform designed to provide a pleasant experience • Scalable platform that can cater to a large volume of inquiries simultaneously • Access to experts who may not be easily reachable through traditional means • Anonymous consultations for situations requiring privacy • Continuous learning and adaptation to stay updated with the latest information in veterinary science • User community for sharing experiences and insights • Integration with wearable devices for monitoring and health tracking of pets • Language translation for users who are not proficient in the primary language • Integration with telemedicine platforms for a more holistic approach to pet health • Accessibility for users with disabilities, promoting inclusivity

early detection of medical conditions, resulting in more severe health outcomes (Choudhary et al., 2023).

In the web of responsibilities within the realm of AI and pet care, Figure 1 portrays a connection from the government to AI chatbots as a regulatory framework and a similar link from AI chatbots to pet owners, serving as an educational conduit. In this dynamic landscape, a significant interplay emerges, showcasing a relationship between AI chatbots and veterinarians. Here, AI chatbots not only disseminate crucial information to pet owners but also engage in a reciprocal exchange of insights with veterinarians, forming a harmonious ecosystem. This collaborative effort emphasizes the pivotal role of government regulations in guiding AI chatbots, the educational function of AI chatbots for pet owners and the symbiotic relationship between AI technology and the expertise of veterinarians in advancing responsible and informed pet care practices.

There are several options available to prevent potential risks associated with the use of AI chatbots for animal health care. An effective solution would be to educate pet owners about the limitations of AI chatbots and the importance of seeking professional advice from a licensed veterinarian. Pet owners should be encouraged to view AI chatbots as a tool that can provide additional insights and support, rather than a substitute for expert medical advice. Educating and raising awareness about the use of AI chatbots in animal health care can

be achieved by means of social media, pet-related websites, brochures and public service announcements (Shahsavari & Choudhury, 2023).

Another option would be to develop regulations and guidelines for AI chatbot companies in order to improve their algorithms regarding animal health care guidance. In other words, regulations can be enacted to ensure that AI chatbots do not substitute for licensed veterinarians and provide appropriate guidance for seeking professional help in different situations. Developing such regulations would require collaboration among a variety of stakeholders, including veterinarians, AI developers and regulatory agencies (Wang et al., 2023).

Additionally, AI chatbots can be developed to work in collaboration with veterinarians; therefore, AI chatbots can be designed to provide preliminary advice to pet owners and assist licensed veterinarians in diagnosing complex medical conditions. The goal of this approach is to provide pet owners with additional insight and support while ensuring that licensed veterinarians are involved in the decision-making process. Collaboration between AI chatbots and veterinarians can help address concerns regarding misdiagnosis and inappropriate treatment as well as promote timely and accurate diagnosis of medical conditions (Abani et al., 2023).

In conclusion, AI is transforming the health care industry at an unprecedented rate, and AI-powered language models like ChatGPT could have a significant impact on one's health. Nevertheless, AI

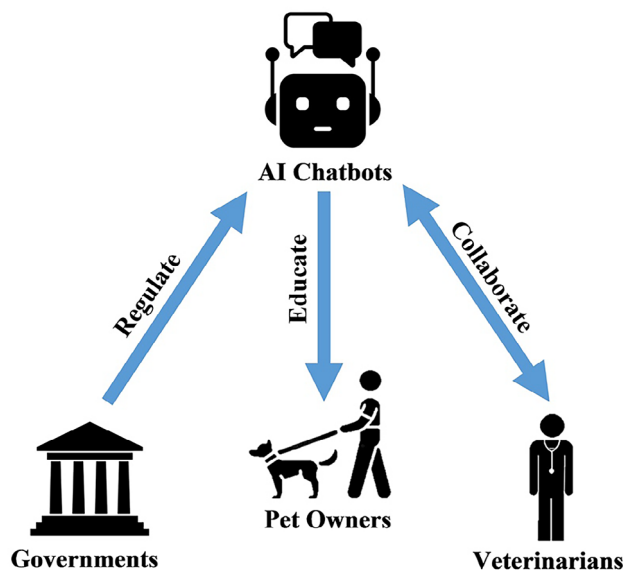


FIGURE 1 The web of responsibilities within the realm of artificial intelligence (AI) and pet care.

chatbots can present potential risks in animal health care, such as misdiagnosis and inappropriate treatment. The education of pet owners regarding the limitations of AI chatbots, the development of regulations and guidelines for AI chatbot companies as well as the design of AI chatbots that work in collaboration with licensed veterinarians are all effective methods for preventing these risks. By carefully considering and appropriately using AI chatbots like ChatGPT, pet owners can ensure their pets receive the necessary care and attention from veterinarians.

AUTHOR CONTRIBUTIONS

Study concept and design: M.J, A.A. Acquisition of information: M.J, A.A. Analysis and interpretation: M.J. Drafting of the manuscript: M.R, A.A and V.R. Critical revision of the manuscript for important intellectual content: M.J, A.A. Study supervision: V.R.

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