Chapter 7
Impact of Artificial Intelligence and Communication Tools in Veterinary and Medical Sciences:
AI in Health Sciences

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ABSTRACT

Artificial intelligence (AI) has revolutionized the scientific and biological fields to facilitate animal and human health. The purpose of this chapter is to explain the impact and role of AI in medical health, animal health, and the coordination of these health sectors using information and communication tools (ICTs) to facilitate health for all in general. Precision medicine, drug discovery, robotics, machine learning, and language processing through AI have been well-elaborated and integrated. AI replaced the major human workforce and also reduced the use of excessive manpower, biologicals, machines, radiations, and surgical instruments to analyze, investigate, and make tentative diagnoses not only in humans but also in various fields of veterinary sciences. In this chapter, major achievements and highlights made by AI technologies and ICTs were described comprehensively from different databases.

1. INTRODUCTION

Artificial Intelligence (AI) refers not to a single piece of machinery but rather it is a very broad term comprising of many tools, technologies, automations, and other aids. It may not have direct relevance with some other fields, but it tends to facilitate the work and some other factors which may be directly or indirectly related to other scientific fields (Ma, 2011). The use of AI in health sector is essential to promote public health around the globe. The opportunities to leverage the AI to improve quality of life in or professional activities seem endless. Over the last 2 decades, research publications on AI in medicine have increased exponentially. In particular, there have been profound advances in AI and diagnostic imaging where AI based technologies have been developed to aid in rapid diagnosis and support radiologists in both research, early detection of changes in human tissues, disease treatment, and commercial settings (Brown J et al. 2018).Factors such as the amount of data collected in clinics, the super speed computers, easily available Electronic Medical Records (EMRs) etc., make AI advancements in virtual assistants, automated image diagnosis, personal health companions, assistance in oncology, cardiology, radiology, and AI powered chatbots for the identification of stones from radiographs. Applications of AI in health sector includes clinical/administrative documentation, speech recognition through ICT tools, AI chat bots, visual aids, and virtual assistant. AI based image processing is serving health department by disease diagnosis and prognosis. AI based reinforcement learning is promoting animal and human health sectors by drug discovery, manufacturing, robotic surgeries, personalized medicine, and outbreak prediction. Several AI based systems have been launched for their use in health sector like Dxplain, Watson, Deepax and many more. Now, many

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