

Chapter 5

Applications and Case Studies in Metaverse Healthcare

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ABSTRACT

The healthcare industry is gradually realising the revolutionary potential of metaverse technology, with specific attention to how it may affect patient participation, and medical education. The purpose of this chapter is to examine the potential effects of metaverse technology on patient outcomes, inclusion, and healthcare inequities. The installation of mobile clinics, interactive surgical training simulations and patient-centred educational experiences, all of which demonstrate the diverse applications of metaverse technology for healthcare are highlighted in the chapter. It draws attention to the function of augmented reality (AR) and using virtual reality (VR) to create dynamic and engaging experiences for patients, teachers, and healthcare professionals. Overall, the chapter concludes that while metaverse technology has great potential to transform healthcare, careful consideration of security, privacy, and ethical issues is more crucial than ever to fully realize the benefits of technology.

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INTRODUCTION

Science fiction writer Neal Stephenson first used the term “Metaverse” in his 1992 book “Snow Crash”. The term “metaverse” in the novel describes the virtual reality setting where individuals communicate with electronic equipment and one another in a computerised setting. In essence, it is the actual world blended with a virtual one. Since then, numerous books, films, and television series have popularised this concept. It is believed that the Metaverse provides the perfect virtual environment in which people can work, socialise, play games, attend events, and even transact business. In order to provide consumers a sensation of presence and comprehension, virtual reality (VR) and augmented reality (AR) technologies are frequently used. Healthcare is one sector where this integration has a lot of potential. The idea of a shared virtual environment called the Metaverse has the potential to completely transform the healthcare sector by offering creative fixes for persistent issues. To illustrate the revolutionary potential of virtual technology to improve patient outcomes, increase medical education, and facilitate referrals to medical institutions, this chapter reviews applications and case studies of virtual technology in healthcare. The range of virtual experiences in healthcare is growing, ranging from online telemedicine consultations to simulations of medical procedures. The face-to-face business culture of the past is giving way to a zero-contact business culture, and online business is becoming more prevalent across all business sectors. Among these, the use of smart technologies in the healthcare sector has become widespread (Lee, 2022). Healthcare providers can leverage augmented reality (AR), virtual reality (VR), and mixed reality (MR) technologies to create immersive and interactive experiences that improve patient engagement, clinical education, and treatment.

Medical education is one of the key areas where Metaverse technology is being used in healthcare. The main tenets of surgical education are death, lectures, and manuals. The strategic planning of business opportunity development of metaverse services in the healthcare industry is one of the most important activities. The presence of multiple critical factors complicates the planning and implementation of strategic planning in the field of business opportunity development, as numerous qualitative and quantitative factors need to be considered (Lee, 2022).

This global approach to medical education guarantees that doctors, wherever they may be, receive high-quality education while also promoting cultural interchange and teamwork. Metaverse has the power to completely change the delivery of healthcare, even outside the realm of medical education. In recent years, telemedicine which involves using communication technology to diagnose and treat patients remotely has grown in popularity, particularly in the fight against the Covid-19 pandemic. Healthcare providers can offer more individualised and high-quality care by in-

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