Chapter 5
The Era of Blockchains, Deepfakes, and NFTs in Therapeutic Treatments:
A Comparative Study

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ABSTRACT

Blockchain and deepfake mark a new step in integrating technology into therapeutic treatment, revolutionizing medical data management and patient care. Blockchain, especially through NFTs, secures healthcare data, ensuring transparency, access, confidentiality, and traceability. Deepfake enhances treatments by creating realistic simulations for rehabilitation and immersion therapies. However, these technologies

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raise ethical concerns about data security, informed consent, and potential misuse. This comparative study examines their applications, benefits, challenges, and ethical issues in healthcare, analyzing their impact on treatment quality and patient well-being. Based on an extensive literature review, findings show blockchain improves data security and traceability, while NFTs enable personalized treatments. Deepfakes, despite potential in therapy, pose risks of image manipulation and consent violations. The study provides recommendations for a regulated and secure integration of these technologies in therapy.

INTRODUCTION

Therapeutic treatments, being a pressing challenge worldwide, encourage more access to effective care and therapeutic solutions (Rai et al., 2023) on a large scale. Integrating digital technologies has opened a completely new dimension into therapy, improving diagnosis and treatment but especially patient support. Advances in the field of artificial intelligence, distributed systems, and digital ownership have created unprecedented paths toward changing landscapes in therapeutic treatments. Of those upcoming, blockchain, NFTs (Non-Fungible Tokens), and deepfakes are the ones gaining much attention in regard to their possible usage in this area.

Blockchain technology allows for secure and decentralized management of data that is tamper-proof, thus potentially improving patient data privacy, interoperability, and trust in digital therapeutic treatment services (CHEN ET AL., 2023). NFTs provide the possibility to authenticate digital assets and enable their monetization, thus opening new ways for personalized therapy content, secure identity verification, and funding for mental health research (Wang et al., 2023). Meanwhile, AI-driven deepfake technology can revolutionize therapeutic applications (Radanovic, & Likić, 2018) by creating hyper-realistic virtual therapists that improve exposure therapy and human-computer interaction within therapy care (Smith et al., 2023).

Meanwhile, both gain wider applications across industries except in therapeutic treatments (Saeed et al., 2022). While each of these technologies has been considered separately in single studies with regard to their respective benefits, there is a lack of a comparative review of advantages, limitations, and ethical considerations related to the same in the context of Therapeutic Treatments (Stublić, Bilogrivić, & Zlodi, 2023). That will show how these technologies are complementary or challenging to one another.

The study will fill this gap through a comparative analysis of blockchain, NFTs, and deepfake technology in therapy (Abbaoui et al., 2023). This present research is of paramount importance in analyzing the impact, use cases, and risks for these technologies; thus, it serves as a great directive for researchers, practitioners, and