Metaverse in Ophthalmology: The Convergence of Virtual and Physical Space in Eye Care and Enhanced Engagement

Abstract

We all live in a hybrid world of online and offline experiences, especially since the start of the COVID-19 pandemic in the beginning of 2020. From video calls to messages, we are now more connected than ever. The term “metaverse” is made up of the terms “meta” which means “beyond”, and “verse” which comes from the word “universe”. The aim of the metaverse is to simplify these means of communication by minimizing inconveniences and improving experiences in the physical world.

The times we are living in are becoming increasingly complex, and the multitude of data that is part of our lives is moving us towards an irreversibly digital future.

Data are the raw material that feeds machine learning and artificial intelligence algorithms, which allow us to make decisions based on the analysis of historical events, and to predict future behavior.

We must add to the equation the future 6G, the sixth generation of hyper- speed mobile connectivity resulting from extremely high frequency spectrum waves, which together with new models of cloud computing, allow the first steps to be taken in different areas of the economy, machine learning, social analytics, blockchain, and health, among other innovations.

Digital transformation is already part of our lives, and the health sector and the therapeutic field of ophthalmology are no exceptions. Surrounded by technology that is evolving exponentially, we are facing a “virtual life" that is evolving amidst social and ethical challenges. The rates of change are being accelerated and future health decisions are being made now. Will the metaverse really allow the virtual and physical space to come together? Will it improve patient healthcare in the field of ophthalmology?

Key words:

Metaverse, total experience, customer experience, virtual, decentralization, Facebook, artificial intelligence, machine learning, reality, augmented reality, mixed reality, extended reality, 6G, telepresence, scalability, ophthalmology, retina