

## LETTERS TO THE EDITOR

# Cosmetic dermatology services in metaverse

Dear Editor,

The metaverse is an interactive mix of digital worlds comprised of virtual reality, augmented reality, mixed reality, and artificial intelligence. This internet domain creates animated avatars of real people and enables people to do all sorts of real-world interactivities in the virtual world, including shopping and traveling.<sup>2</sup> It was only a matter of time and a natural progression of events that there would be a rising interest in the application of the Metaverse in all fields of medicine including cosmetic dermatology.<sup>1</sup>

The metaverse enables care providers to practice procedures on life-like mannequins.<sup>3</sup> Using graphic design, it can imitate almost all dermatological and cosmetic procedures for trainees to practice and hone their skill set. This can also provide patient education regarding the nature of their condition, what actions to take, which doctor to see, when to refer, and what available therapeutic options are. This may help decrease costs and time consumed.

Furthermore, Mixed Reality Solutions platforms can manufacture surgical tools for interventional purposes and provide long-distance procedural actions.<sup>4</sup> This improves the quality, quantity, and timing of cosmetic care delivery for all people, even when there are no doctors available.

The metaverse and machine learning can also help in the diagnosis and management of dermatological disorders and offer the best cosmetic procedure. This is possible through the assessment of patients and scoring the severity of their cosmetic concerns. The tool also aids in sharing the procedure outcome ahead and offer the best approach. Given its malleability, the platform can share other patients' experience and outcome of the same procedure, thus enabling the patients to interact with them and decide more confidently. It also offers a more convenient patient-doctor interaction where they can share their points of view more effectively. Consequently, both patients' and doctors' satisfaction is increased, while cost and time consumed in repeat visits is decreased. This platform can also provide an interactive environment where different specialists can share their views and help each other to make decisions.<sup>5</sup>

Cosmetic dermatology research can also benefit from the metaverse and machine learning by collecting and storing patients' data prior to any medical or interventional procedures and for follow up purposes to maximize satisfaction and outcome. Besides, the data help in the development of more effective

cosmetic products, track their efficacy, and provide feedback to enhance the quality of the product.

In conclusion, the metaverse will provide an advanced technology to deliver cosmetic dermatology care for education, research, diagnosis, intervention, and interaction purposes. It decreases medical costs and time consumed over repetitive unnecessary visits and procedures; however, concerns regarding security, technical issues, and legislative matters exist. Hereby, we suggest that scientists of all related disciplines collaborate, as soon as possible, to take advantage of this highly effective environment.

## DISCLAIMER

We confirm that the manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met and that each author believes that the manuscript represents honest work.

## AUTHOR CONTRIBUTIONS

Mahsa Babaei contributed to writing and revising the manuscript. Hassan Galadari and Michael H. Gold contributed to review and revising the manuscript. Mohamad Goldust contributed to conception, writing, review, and revising the manuscript.

## CONFLICT OF INTEREST STATEMENT




None declared.

## DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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