Qeios

Peer Review

Review of: "Virtual Reality in Medical Education: Prometheus' Gift or Pandora's Box?"

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In order to provide a basic understanding of virtual reality (VR) and its applicability in medical education, the article explains terms, immersive environment types, and usage techniques, including headset-free and head-mounted systems. The topic is current and pertinent, but the execution falls short of what is expected of a contribution to medical literature in terms of scientific rigor, structural clarity, and critical depth.

Language and Tone

The oversimplified tone and frequent allusions to mythology weaken the impact of the scholarly discussion. These references seem superfluous and distracting, even though they may have been meant to engage. Stereoscopy, for instance, is explained in a way that is too informal and simplistic rather than scientific. A medical audience would benefit more from a more complex, anatomically based explanation that makes reference to binocular disparity, convergence, accommodation-vergence conflict, and the neurophysiological mechanisms of depth perception. Giving precise and insightful information about the visual system is essential because the article talks about visual immersion using glasses and headsets. This ought to cover the ways in which these gadgets affect the anatomy and physiology of the eyes, including pupil response, lens accommodation, and strain brought on by fixed focal distances.

Illustrative Support and Article Impact

The article's present lack of critical insight and depth cannot be entirely made up for by adding more illustrative content, such as schematics of VR setups, comparison images between AR, VR, and MR, and interface walkthroughs. Clarity is improved by visual reinforcement, but content that is essentially lacking in analytical weight is not elevated by it. The article's overall contribution to the field is still

debatable in its current form. A review needs to do more than just define terms; it should also put them in context, consider their implications, and encourage thoughtful application.

Means, Not Myth: Beyond Prometheus and Pandora

VR as a medical education tool shouldn't be vilified as a Pandora's box or romanticized as a Promethean gift. It is a means, not a sign of salvation or doom. The degree to which it is successfully incorporated into clinical practice and educational frameworks determines its worth. This integration necessitates careful preparation, continuous assessment, and the upholding of moral, humanistic values. VR has great potential when used wisely, but if it is abused or overused, it could drive future medical professionals away from the human aspects of care.

Digital Identity and Professional Responsibility

The article's presentation of digital identity as a benefit of virtual reality is devoid of the critical analysis required for medical ethics. Students need to realize that their online persona cannot—and should not—be separated from their obligations in the real world. While digital simulations can offer anonymity or escape, real-world clinical settings necessitate presence, empathy, and accountability. Furthermore, people with visible or invisible disabilities should see virtual reality (VR) as a place to develop new skills and authentically affirm who they are, rather than as a means of erasing themselves.

Physiological Concerns: Moving Beyond Blink Rates

The discussion of eye strain concentrates too much on the differences in gaze direction and blink intervals between screen use and reading. This focus misses out on a larger chance to investigate the ways in which screen time leads to oxidative stress and possible retinal damage. An examination of blue light toxicity, circadian disruption, and long-term risks to visual health would be beneficial for medical students. The article's scientific foundation and applicability would be improved by incorporating current data from ophthalmologic studies.

Conclusion: Reframing the Narrative

The conclusion of the article starts off on an unwarrantedly negative note. Given VR's expanding role in medical education, a revised tone—neutral, cautiously optimistic, or balanced—would be more appropriate. It should affirm the potential advantages of virtual reality while emphasizing that its use must enhance human interaction rather than take its place. The collaborative, interpersonal nature of healthcare, where emotional intelligence and teamwork are still invaluable, is acknowledged by placing emphasis on this balance.

Overall, even though the article discusses a topic that is becoming more and more significant, its execution is lacking. It needs to take on a more academic tone, include more solid evidence, and critically examine the potential and drawbacks of virtual reality in order to make a significant contribution to medical literature. When talking about stereoscopy and headset-based systems, it should also go more deeply into the scientific foundations of vision and visual technologies. Only then will it be able to function as a resource for teachers and students navigating the future of medical education, rather than merely being an introductory read.

Declarations

Potential competing interests: No potential competing interests to declare.