
Virtual and Augmented Reality in the ICU



Virtual reality (VR) and augmented reality (AR) are emerging technologies with diverse applications, from entertainment and education to medical care. VR immerses users in a virtual three-dimensional environment, while AR retains connection to the real world while increasing information through the use of virtual elements. Both require specialised VR/AR glasses.

These technologies have already found extensive use in healthcare, especially in areas such as cardiovascular care and neurosurgery. They are increasingly being applied in intensive care medicine and have the potential to benefit both medical staff and patients. VR offers a safe environment for healthcare providers to practice complex intensive care procedures, while AR provides additional information to support users before and during the procedures. For patients, VR can reduce stress during an ICU stay by distracting them from pain. Additionally, VR combined with gaming can enhance cognitive and motor skills.

Hence, VR and AR are fast-evolving technologies with diverse applications in intensive care. However, despite a growing body of research on VR and AR, there is a lack of a systematic overview of their applications in intensive care medicine.

This systematic review offers an in-depth summary of the current utilisation of VR and AR in various areas of intensive care medicine. The authors conducted a systematic search to identify existing evidence regarding the various applications of VR and AR for healthcare providers working in intensive care units, and for children and adults who were hospitalised in ICUs due to critical illnesses.

The review included a total of 59 studies. that explored various applications of VR and AR in ICUs. These technologies have been used to train and assist ICU personnel in performing complex procedures like cardiopulmonary resuscitation, vascular punctures, endotracheal intubation, and tracheostomy. For patients, VR has shown potential in reducing stress and pain during invasive interventions and ICU stays. It also facilitates communication with relatives and facilitates patient rehabilitation programmes.

Both VR and AR present numerous possibilities for improving current care, benefitting both healthcare professionals and patients. It is likely that these technologies will continue to evolve, leading to expanded applications in the intensive care medicine.

Source: [Annals of Intensive Care](#)

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